

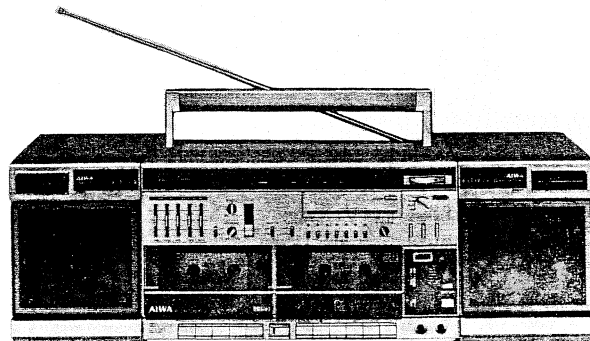
# AIWA® SERVICE MANUAL

S/M Code No. 85-005 **W**  
DATE OF ISSUE 3/1985

**CARRY COMPONENT  
SYSTEM**

MODEL NO.

## CA-W90



**TYPE. HS, HB, HUB, US, UB, CS, CB,  
ES, EB, KS, KB, GB, ZS, ZB**

### SPECIFICATIONS

|                  |                                                                                                                                                                    |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type             | Stereo multiband radio<br>cassette recorder                                                                                                                        |
| Power source     | Batteries, DC 13.5V (R20P,<br>D or SUM-1×9)<br>Car battery (thru car adaptor)                                                                                      |
|                  | <b>CA-W90H</b><br>AC 110—120 V /220—240 V<br>(switchable), 50—60 Hz                                                                                                |
|                  | <b>CA-W90U</b><br>AC 120V/220—240 V<br>(switchable), 60 Hz                                                                                                         |
|                  | <b>CA-W90G</b><br>AC 120 V /240 V<br>(switchable), 50—60 Hz                                                                                                        |
|                  | <b>CA-W90E,Z</b><br>AC 110—120 V/220—240 V<br>(switchable), 50—60 Hz                                                                                               |
|                  | <b>CA-W90K</b><br>AC 120 V/240 V (switchable),<br>50—60 Hz                                                                                                         |
| Output           | 14 W maximum DC (7W + 7W)<br>FTC Rule<br>6 watts per channel, Min.<br>RMS at 3.2ohms, from 60 Hz to<br>15 kHz, with no more than 10%<br>Total Harmonic Distortion. |
| Power cosumption | <b>CA-W90H</b> : 38W<br><b>CA-W90U</b> : 28W<br><b>CA-W90G</b> : 50W<br><b>CA-W90E,Z</b> : 50 W<br><b>CA-W90K</b> : 56 W                                           |

#### Radio Section

##### Frequency ranges

**CA-W90H,G**  
FM: 88—108 MHz  
MW 530—1,605 kHz  
SW<sub>1</sub>: 2.3—7.0 MHz  
SW<sub>2</sub>: 7.0—22 MHz

**CA-W90U**  
FM: 88—108 MHz  
AM 530—1,605 kHz

**CA-W90E,K,Z**  
FM: 88—108 MHz  
MW: 530—1,605 kHz  
SW: 5.9—18 MHz  
LW: 150—285 kHz

##### Antennaas

**CA-W90H,G**  
Whip antenna for FM and SW<sub>2</sub>  
Ferrite bar antenna for MW and  
SW<sub>1</sub>

**CA-W90U**  
Whip antenna for FM  
Ferrite bar antenna for AM

**CA-W90E,K,Z**  
Whip antenna for FM and LW  
Ferrite bar antenna for MW and  
SW  
External antenna terminals for  
FM (except Z model)

● Design and specifications are subject to change without  
notice.

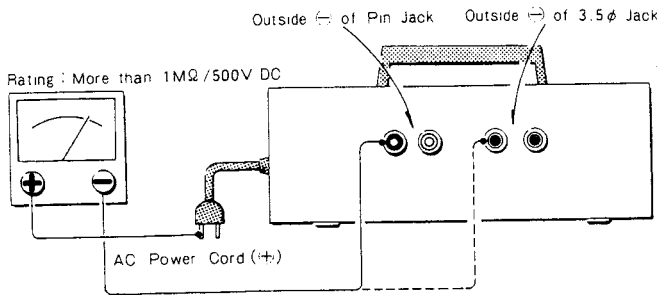
Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of service.

1. No scratch and melting shall be made to covered lead-wires of an a.c. primary circuit including mains leads.
2. No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.
3. When, on pattern sides of circuit boards, additional repair-parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.
4. The following matters shall be maintained as they are, when repairing.
  - 1) Soldering of lead-wire ends
    - \* Care should be taken of the space distance in an a.c. primary circuit as well as soldering.
  - 2) Wiring and holding of lead-wires with wire-clips and binders
  - 3) Materials of lead-wires
    - \* e.g.; For UL models, lead-wires to be used shall be approved or accepted by the UL.
  - 4) Location of all kinds of insulators
  - 5) Setting of voltage selector switch
    - \* Set the Voltage Selector Switch to 240V, 220V, or 120V, According to your Local Voltage.
5. After repaired, the insulation resistance or leakage current shall be measured with  $500 \pm 5V$  D.C and shall be not less than  $1M\Omega$ .

6. General instructions for mechanism repair

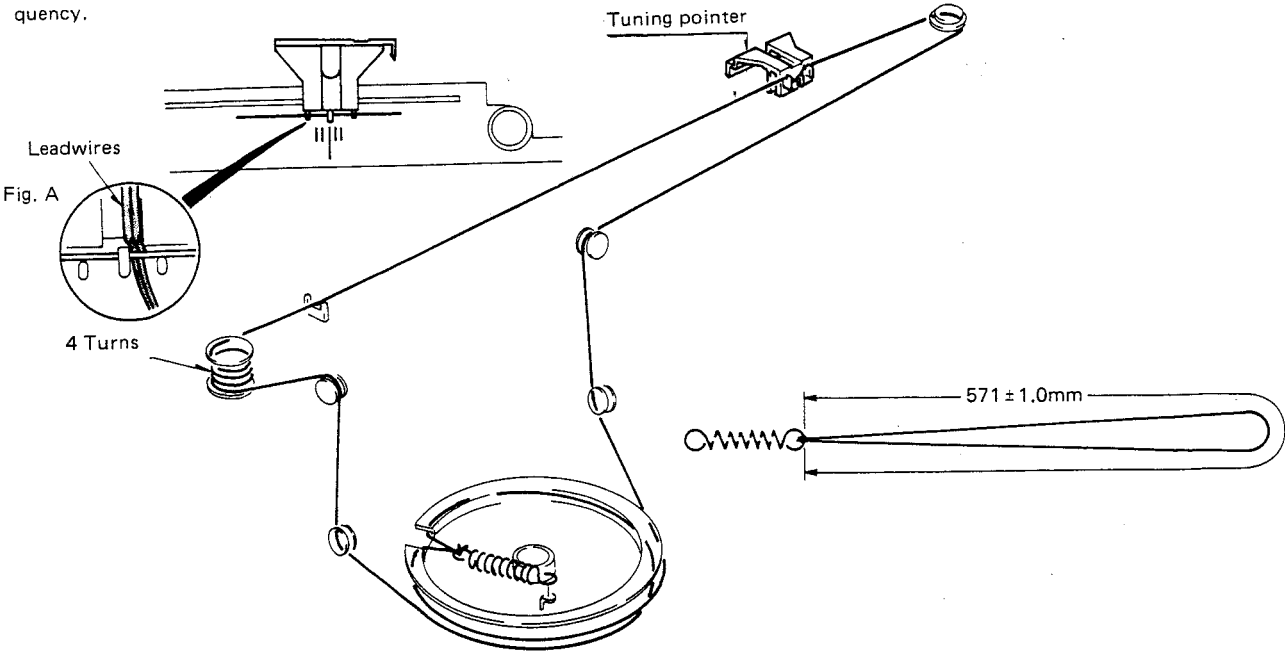
- 1) Lubricants been stained the surfaces of transmitting portion of the belts, idlers, capstan and pinch roller shall be removed, because slippery and faulty tape travel shall be caused.
- 2) When oiling, only one or two drops shall be applied so as not to run over and be dispersed. Note should be taken of the metal fitting for the capstan and rotating portions of the idlers and pinch roller, especially.
- 3) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. — No re-utilization due to unreliability.
- 4) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, malfunction and damage.

Measuring Point



DIAL CORD STRINGING

Adjust the tuning pointer for the marking on the guide plate, putting the pointer leadwires in order as shown in Fig. A after turned the tuning dial to set the lowest frequency.



ELECTRICAL MAIN PARTS LIST (CA-W90)

- +++ mark denotes a component of assembled part which part code is represented by a previously stated component.
- \* -mark means less required items and availabilities may be limited.

CAPACITORS  
No mark, U, UF:  $\mu$ F  
P, PF : pF

COILS  
MMH: mH  
UH :  $\mu$ H

FUSE  
MMA: mA

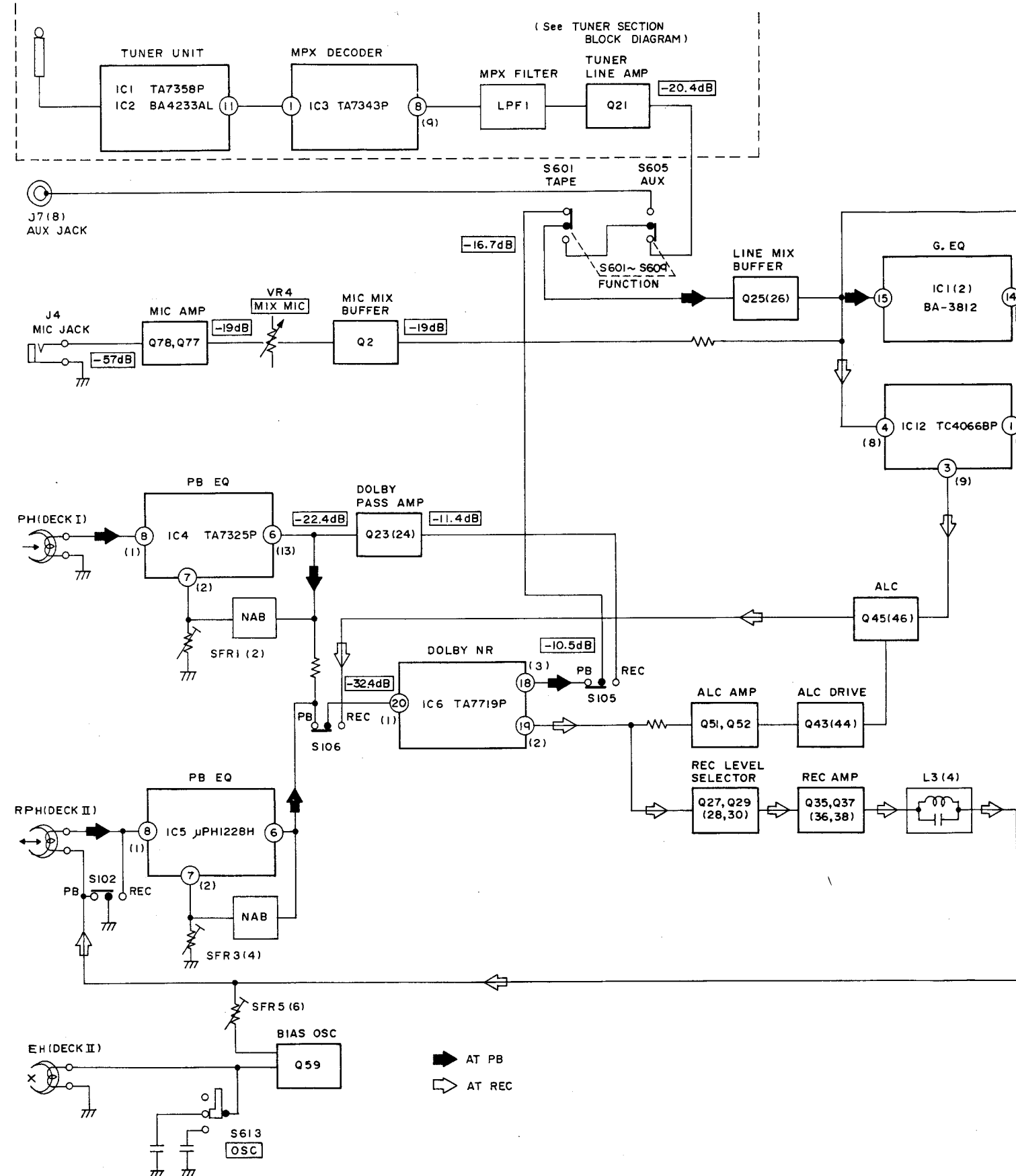
| Ref. No                            | Part No      | Description             | Ref. No | Part No      | Description               | Ref. No                             | Part No      | Description                       | Ref. No | Part No      | Description                           | F |
|------------------------------------|--------------|-------------------------|---------|--------------|---------------------------|-------------------------------------|--------------|-----------------------------------|---------|--------------|---------------------------------------|---|
| === IC ===                         |              |                         | C322    | * 87-015-693 | CAP,ELECT 0.33-50         | S106                                | +++          | SLIDE SW 1-9-2 (REC/PB)           | C57     | * 87-012-105 | CAP,CERA-SOL 0.022                    |   |
|                                    | 87-027-955   | IC,AN7168               | C501    | * 87-018-038 | CAP,CERA-SOL S 330P       | S107                                | +++          | SLIDE SW 1-9-2 (REC/PB)           | C58     | * 87-012-105 | CAP,CERA-SOL 0.022                    |   |
|                                    | 87-020-291   | IC,BA3812L              | C502    | * 87-018-038 | CAP,CERA-SOL S 330P       | S108                                | +++          | SLIDE SW 1-9-2 (REC/PB)           | C59     | * 87-018-172 | CAP,CERA-SOL SS 12P UJ (H,HU,G ONLY)  |   |
|                                    | 87-020-355   | IC,BA4232AL             | C603    | * 87-014-069 | CAP,PP 3300P              | S109                                | +++          | SLIDE SW 1-9-2 (REC/PB)           | C59     | * 87-018-173 | CAP,CERA-SOL SS 15P UJ (E,K,Z ONLY)   |   |
|                                    | 87-027-683   | IC,TA7325P              |         |              |                           |                                     |              |                                   |         |              |                                       |   |
|                                    | 87-027-867   | IC,TA7343P              | C661    | * 87-015-696 | CAP,ELECT 2.2-50V         | S601                                | 81-541-667   | PUSH SW (FUNC.,TAPE-AUX-RADIO-FM) | C60     | * 87-018-101 | CAP,CERA-SOL SS 5.6P (H,HU,G ONLY)    |   |
|                                    | 87-020-356   | IC,TA7358P              | C662    | * 87-015-681 | CAP,ELECT 10-16V          | S602                                | +++          | PUSH SW (FUNC.,TAPE-AUX-RADIO-FM) | C60     | * 87-018-104 | CAP,CERA-SOL SS 10P (E,K,Z ONLY)      |   |
|                                    | 87-020-443   | IC,TA7719P              | C903    | * 87-018-047 | CAP,CERA-SOL S 0.01Y/16   | S603                                | +++          | PUSH SW (FUNC.,TAPE-AUX-RADIO-FM) | C61     | * 87-018-103 | CAP,CERA-SOL SS 8.2P (H,HU,G ONLY)    |   |
|                                    | 87-027-656   | IC,TC4066BP             | C907    | * 87-018-047 | CAP,CERA-SOL S 0.01Y/16   | S604                                | +++          | PUSH SW (FUNC.,TAPE-AUX-RADIO-FM) | C61     | * 87-018-111 | CAP,CERA-SOL SS 27P (E,K,Z ONLY)      |   |
|                                    | 87-020-079   | IC,TD6255S              | C912    | * 87-018-036 | CAP,CERA-SOL S 220P       | S605                                | +++          | PUSH SW (FUNC.,TAPE-AUX-RADIO-FM) | C62     | * 87-018-168 | CAP,CERA-SOL SS 5.6P UJ (H,HU,G ONLY) |   |
|                                    | 87-027-910   | IC,UPC1228HA            | C914    | * 87-010-121 | CAP,ELECT 6800-25V        | S606                                | +++          | PUSH SW (FUNC.,TAPE-AUX-RADIO-FM) | C62     | * 87-018-171 | CAP,CERA-SOL 10P UJ (E,K,Z ONLY)      |   |
|                                    |              |                         | D1      | 87-020-285   | ENCAPSULATED DIODE,DBA30C | S607                                | +++          | PUSH SW (FUNC.,TAPE-AUX-RADIO-FM) | C63     | * 87-018-171 | CAP,CERA-SOL 10P UJ (H,HU,G ONLY)     |   |
|                                    |              |                         | D11     | * 87-020-123 | DIODE,DS446               | S608                                | +++          | PUSH SW (FUNC.,TAPE-AUX-RADIO-FM) | C63     | * 87-018-178 | CAP,CERA-SOL 39P UJ (E,K,Z ONLY)      |   |
| === TRANSISTOR ===                 |              |                         |         |              |                           | S609                                | +++          | PUSH SW (FUNC.,TAPE-AUX-RADIO-FM) | C64     | * 87-018-134 | CAP,CERA-SOL SS 0.01                  |   |
|                                    | 89-110-155   | TRANSISTOR,2SA1015,GR   | D13     | 87-027-097   | DIODE,1S1555              | S610                                | +++          | PUSH SW (FUNC.,TAPE-AUX-RADIO-FM) | C65     | * 87-018-148 | CAP,CERA-SOL SS 12P CH                |   |
|                                    | 89-106-834   | TRANSISTOR,2SA683RS     | D17     | 87-027-097   | DIODE,1S1555              | S613                                | 81-031-819   | SLIDE SW (OSC)                    | C67     | * 87-018-134 | CAP,CERA-SOL SS 0.01                  |   |
|                                    | 89-209-412   | TRANSISTOR,2SB941PQ     | D18     | 87-027-097   | DIODE,1S1555              | SCR1                                | 87-026-185   | SCR DRA03A                        | C68     | * 87-018-134 | CAP,CERA-SOL SS 0.01 (E,K,Z ONLY)     |   |
|                                    | 89-318-155   | TRANSISTOR,2SC1815,GR   | D19     | 87-027-097   | DIODE,1S1555              |                                     |              |                                   |         |              |                                       |   |
|                                    | 89-318-154   | TRANSISTOR,2SC1815,Y    | D20     | 87-027-097   | DIODE,1S1555              | SFR1                                | * 87-021-735 | SFR 220                           | C69     | * 87-018-009 | CAP,CERA-SOL S 10P (H,HU,G ONLY)      |   |
|                                    | 89-318-464   | TRANSISTOR,2SC1846R     | D21     | 87-027-097   | DIODE,1S1555              | SFR2                                | * 87-021-735 | SFR 220                           | C69     | * 87-018-012 | CAP,CERA-SOL S 15P (E,K,Z ONLY)       |   |
|                                    | 89-318-233   | TRANSISTOR,2SC1923,O    | D22     | 87-027-097   | DIODE,1S1555              | SFR3                                | * 87-021-857 | SFR 220                           | C70     | * 87-018-097 | CAP,CERA-SOL SS 2.2P                  |   |
|                                    | 89-320-011   | TRANSISTOR,2SC2001(L)   | D23     | 87-027-097   | DIODE,1S1555              | SFR4                                | * 87-021-857 | SFR 220                           | C71     | * 87-018-159 | CAP,CERA-SOL SS 8.2P RH (H,HU,G ONLY) |   |
|                                    | 89-420-011   | TRANSISTOR,2SC2001K,L   |         |              |                           | SFR5                                | * 81-541-659 | SFR 100K                          | C71     | * 87-018-160 | CAP,CERA-SOL SS 10P RH (E,K,Z ONLY)   |   |
|                                    | 89-413-023   | TRANSISTOR,2SD1302S     | D24     | 87-027-097   | DIODE,1S1555              | SFR6                                | * 81-541-659 | SFR 100K                          | C72     | * 87-014-061 | CAP,PP 1500P (H,HU,G ONLY)            |   |
|                                    |              |                         | D25     | 87-027-097   | DIODE,1S1555              | SFR7                                | * 87-021-745 | SFR 47K                           | C72     | * 87-014-045 | CAP,PP 330P (E,K,Z ONLY)              |   |
|                                    |              |                         | D26     | 87-027-097   | DIODE,1S1555              | SFR8                                | * 87-021-745 | SFR 47K                           | C73     | * 87-014-045 | CAP,PP 330P (H,HU,G ONLY)             |   |
|                                    |              |                         | D27     | 87-027-097   | DIODE,1S1555              |                                     |              |                                   |         |              |                                       |   |
| === MAIN CIRCUIT BOARD SECTION === |              |                         | D28     | 87-027-097   | DIODE,1S1555              | SFR9                                | * 87-021-910 | SFR 4.7K                          | C73     | 87-014-033   | CAP,PP 100P (E,K,Z ONLY)              |   |
|                                    |              |                         | D29     | 87-027-301   | DIODE,ZENER HZ 3A1        | SFR10                               | * 87-021-910 | SFR 4.7K                          | C74     | * 87-018-160 | CAP,CERA-SOL SS 10P (E,K,Z ONLY)      |   |
|                                    |              |                         | D30     | 87-027-301   | DIODE,ZENER HZ 3A1        | SFR11                               | * 87-021-910 | SFR 4.7K                          | C75     | * 87-018-134 | CAP,CERA-SOL SS 0.01 (E ONLY)         |   |
|                                    |              |                         | D31     | 87-027-097   | DIODE,1S1555              |                                     |              |                                   | C76     | * 87-018-131 | CAP,CERA-SOL SS 1000P (E,K,Z ONLY)    |   |
| PCB-A                              | * *          | MAIN CIRCUIT BOARD      |         |              |                           | === TUNER CIRCUIT BOARD SECTION === |              |                                   | C77     | * 87-018-160 | CAP,CERA-SOL SS 10P (E,K,Z ONLY)      |   |
|                                    | * 87-033-147 | FUSE CLAMP              | D33     | 87-027-509   | DIODE,ZENER HZ12B3 T2     | PCB-B                               | 81-540-601   | TUNER CIRCUIT BOARD               | CF1     | * 87-008-261 | FILTER SFE 10.7 MA5-A (H,HU,G ONLY)   |   |
| C103                               | * 87-018-038 | CAP,CERA-SOL S 330P     | D34     | 87-027-509   | DIODE,ZENER HZ12B3 T2     | BPF1                                | * 87-033-099 | FILTER BFW3                       | CF1     | * 87-008-264 | FILTER SFE 10.7 MS 2-A (E,K,Z ONLY)   |   |
| C104                               | * 87-018-038 | CAP,CERA-SOL S 330P     | D35     | 87-027-606   | DIODE,ZENER HZ7C2L        | C1                                  | * 87-018-104 | CAP,CERA-SOL 10P                  | CF2     | * 87-008-261 | FILTER SFE 10.7 MA5-A (H,HU,G ONLY)   |   |
|                                    |              |                         | D36     | 87-027-097   | DIODE,1S1555              | C2                                  | * 87-018-047 | CAP,CERA-SOL 0.01Y/16             |         |              |                                       |   |
| C105                               | * 87-018-037 | CAP,CERA-SOL S 270P     |         |              |                           | C3                                  | * 87-018-131 | CAP,CERA-SOL SS 1000P             | CF2     | * 87-008-264 | FILTER SFE 10.7 MS 2-A (E,K,Z ONLY)   |   |
| C106                               | * 87-018-037 | CAP,CERA-SOL S 270P     | D37     | 87-027-097   | DIODE,1S1555              | C4                                  | * 87-018-100 | CAP,CERA-SOL SS 4.7P              | D1      | 87-020-110   | DIODE,1SS177                          |   |
| C153                               | * 87-018-042 | CAP,CERA-SOL 680P       | D38     | 87-027-097   | DIODE,1S1555              | C5                                  | * 87-018-149 | CAP,CERA-SOL SS 15P CH            | D2      | 87-020-110   | DIODE,1SS177                          |   |
| C154                               | * 87-018-042 | CAP,CERA-SOL 680P       | D39     | 87-027-097   | DIODE,1S1555              | C6                                  | * 87-018-134 | CAP,CERA-SOL SS 0.01              | D3      | * 87-027-900 | DIODE,1SV147                          |   |
|                                    |              |                         | D40     | 87-027-097   | DIODE,1S1555              |                                     |              |                                   |         |              |                                       |   |
| C205                               | * 87-018-032 | CAP,CERA-SOL S 100P     |         |              |                           | C7                                  | * 87-018-131 | CAP,CERA-SOL SS 1000P             | D4      | * 87-027-900 | DIODE,1SV147                          |   |
| C206                               | * 87-018-032 | CAP,CERA-SOL S 100P     | D41     | 87-027-097   | DIODE,1S1555              | C8                                  | * 87-018-106 | CAP,CERA-SOL SS 15P (H,HU,G ONLY) | D5      | 87-020-110   | DIODE,1SS177                          |   |
| C221                               | * 87-018-038 | CAP,CERA-SOL S 330P     | D42     | 87-027-449   | DIODE,ZENER,HZ15-3L       | C8                                  | * 87-018-107 | CAP,CERA-SOL SS 18P (E,K,Z ONLY)  | D6      | 87-027-555   | ZENER,DIODE HZ5C2                     |   |
| C222                               | * 87-018-038 | CAP,CERA-SOL S 330P     | D43     | 87-027-097   | DIODE,1S1555              | C9                                  | * 87-018-134 | CAP,CERA-SOL SS 0.01              | D7      | 87-020-110   | DIODE,1SS177                          |   |
|                                    |              |                         | D44     | 87-027-173   | DIODE,ZENER RD4.7         |                                     |              |                                   |         |              |                                       |   |
| C223                               | * 87-018-038 | CAP,CERA-SOL S 330P     |         |              |                           | C10                                 | * 87-018-134 | CAP,CERA-SOL SS 0.01              | D8      | 87-020-110   | DIODE,1SS177                          |   |
| C224                               | * 87-018-038 | CAP,CERA-SOL S 330P     | D45     | 87-027-097   | DIODE,1S1555              | C11                                 | * 87-015-240 | CAP,ELECT 0.47-50V(LL)            | D9      | 87-027-606   | ZENER,DIODE HZ7C2L                    |   |
| C233                               | * 87-018-032 | CAP,CERA-SOL S 100P     | D46     | 87-027-502   | DIODE,ZENER 05Z3.9        | C12                                 | * 87-018-134 | CAP,CERA-SOL SS 0.01              | D10     | 87-020-110   | DIODE,1SS177                          |   |
| C234                               | * 87-018-032 | CAP,CERA-SOL S 100P     | D47     | 87-027-173   | DIODE,ZENER RD4.7         | C13                                 | * 87-018-171 | CAP,CERA-SOL 10P UJ               | D11     | 87-027-702   | ZENER,DIODE HZ6C2L                    |   |
|                                    |              |                         | D48     | 87-027-097   | DIODE,1S1555              |                                     |              |                                   |         |              |                                       |   |
| C235                               | * 87-015-681 | CAP,ELECT 10-16V        |         |              |                           |                                     |              |                                   | D12     | 87-020-110   | DIODE,1SS177                          |   |
| C236                               | * 87-015-681 | CAP,ELECT 10-16V        | AF1     | 87-035-257   | FUSE,4A                   |                                     |              |                                   | D13     | * 87-017-004 | DIODE,SD-117                          |   |
| C251                               | * 87-015-694 | CAP,ELECT 0.47-50V      | J1      | 87-049-084   | JACK,3.5 (SP OUTPUT,L)    |                                     |              |                                   | D14     | 87-020-110   | DIODE,1SS177 (Z ONLY)                 |   |
| C252                               | * 87-015-694 | CAP,ELECT 0.47-50V      | J2      | 87-049-084   | JACK,3.5 (SP OUTPUT,R)    |                                     |              |                                   | L1      | * 87-003-118 | COIL,CHOKE 0.27UH (H,HU,G ONLY)       |   |
|                                    |              |                         | J7      | * 87-049-506 | PIN 2P (AUX,L)            |                                     |              |                                   |         |              |                                       |   |
| C253                               | * 87-015-681 | CAP,ELECT 10-16V        |         |              |                           | C14                                 | * 87-018-134 | CAP,CERA-SOL SS 0.01              | L2      | * 87-006-074 | COIL RF FM                            |   |
| C254                               | * 87-015-681 | CAP,ELECT 10-16V        | J8      | +++          | PIN 2P (AUX,R)            | C15                                 | * 87-018-134 | CAP,CERA-SOL SS 0.01              | L3      | * 87-007-158 | COIL,OSC FM                           |   |
| C255                               | * 87-018-032 | CAP,CERA-SOL S 100P     | J9      | 87-049-338   | JACK 2.5 (PLAYER SYNC)    | C16                                 | * 87-018-134 | CAP,CERA-SOL SS 0.01              | L4      | * 87-008-292 | IFT FM PS                             |   |
| C256                               | * 87-018-032 | CAP,CERA-SOL S 100P     | L1      | * 81-541-621 | COIL OSC 85K              | C17                                 | * 87-012-105 | CAP,CERA-SOL 0.022                | L5      | * 87-008-294 | 2E.Q CFMA-468 PS                      |   |
|                                    |              |                         | L2      | * 82-401-661 | COIL CHOKE 600UH          |                                     |              |                                   |         |              |                                       |   |
| C261                               | * 87-018-047 | CAP,CERA-SOL S 0.01Y/16 |         |              |                           | C18                                 | * 87-018-134 | CAP,CERA-SOL SS 0.01              |         |              |                                       |   |
| C301                               | * 87-015-688 | CAP,ELECT 4.7-35V       |         |              |                           | C20                                 | * 87-018-133 | CAP,CERA-SOL SS 4700P             | L6      | * 87-008-293 | IFT FM(QUAD)PS                        |   |
| C302                               | * 87-015-688 | CAP,ELECT 4.7-35V       | L3      | * 82-135-631 | FILTER,TRAP 85K           | C22                                 | * 87-012-105 | CAP,CERA-SOL 0.022                | L7      | * 87-003-118 | COIL,CHOKE 0.27UH                     |   |
| C303                               | * 87-018-038 | CAP,CERA-SOL S 330P     | L4      | * 82-135-631 | FILTER,TRAP 85K           | C23                                 | * 87-018-134 | CAP,CERA-SOL SS 0.01              | L8      | * 87-007-156 | COIL,OSC SW1 PS (E,K,Z ONLY)          |   |
|                                    |              |                         | L5      | * 81-541-622 | COIL,PEAKING DECK         |                                     |              |                                   | L8      | * 87-007-157 | COIL,OSC SW2 PS (H,HU,G ONLY)         |   |
|                                    |              |                         | L6      | * 81-541-622 | COIL,PEAKING DECK         |                                     |              |                                   |         |              |                                       |   |
| C304                               | * 87-018-038 | CAP,CERA-SOL S 330P     |         |              |                           | C24                                 | * 87-018-119 | CAP,CERA-SOL SS 100P              |         |              |                                       |   |
| C307                               | * 87-015-681 | CAP,ELECT 10-16V        |         |              |                           | C29                                 | * 87-015-695 | CAP,ELECT 1-50                    |         |              |                                       |   |
| C308                               | * 87-015-681 | CAP,ELECT 10-16V        | LPF1    | * 87-008-253 | LPF                       | C30                                 | * 87-018-134 | CAP,CERA-SOL SS 0.01              | L9      | * 87-006-079 | COIL ANT SW2 (H,HU,G ONLY)            |   |
| C315                               | * 87-015-681 | CAP,ELECT 10-16V        | R507    | 87-025-313   | RES,NONFLAM 4.7           | C32                                 | * 87-015-695 | CAP,ELECT 1-50                    | L9      | * 87-006-080 | COIL ANT SW (E,K,Z ONLY)              |   |
|                                    |              |                         | R508    | 87-025-313   | RES,NONFLAM 4.7           |                                     |              |                                   | L10     | * 81-541-672 | ANT,FERRITE BAR MM-SW1 (H,HU,G ONLY)  |   |
|                                    |              |                         | S101    | 81-541-607   | SLIDE SW 1-9-2 (REC/PB)   |                                     |              |                                   | L10     | * 81-541-673 | ANT,FERRITE BAR LW-MM (E,K,Z ONLY)    |   |
| C316                               | * 87-015-681 | CAP,ELECT 10-16V        |         |              |                           | C35                                 | * 87-014-057 | CAP,PP 1000P                      |         |              |                                       |   |
| C319                               | * 87-015-691 | CAP,ELECT 0.1-50        | S102    | +++          | SLIDE SW 1-9-2 (REC/PB)   | C36                                 | * 87-015-696 | CAP,ELECT 2.2-50                  | L11     | * 81-541-672 | ANT,FERRITE BAR MM-SW1 (H,HU,G ONLY)  |   |
| C320                               | * 87-015-691 | CAP,ELECT 0.1-50        | S103    | +++          | SLIDE SW 1-9-2 (REC/PB)   | C44                                 | * 87-018-134 | CAP,CERA-SOL SS 0.01              | L11     | * 81-541-673 | ANT,FERRITE BAR LW-MM (E,K,Z ONLY)    |   |
| C321                               | * 87-015-693 | CAP,ELECT 0.33-50       | S104    | +++          | SLIDE SW 1-9-2 (REC/PB)   | C45                                 | * 87-018-134 | CAP,CERA-SOL SS 0.01              | L12     | * 87-007-154 | COIL,OSC MM PS (E,K,Z ONLY)           |   |
|                                    |              |                         | S105    | +++          | SLIDE SW 1-9-2 (REC/PB)   | C53                                 | * 87-018-134 | CAP,CERA-SOL SS 0.01              | L12     | * 87-007-155 | COIL,OSC SW1 PS (H,HU,G ONLY)         |   |

**Combination Circuit Board B 81-541-680**  
**PCB-C 81-541-681**  
**PCB-H 81-541-682**



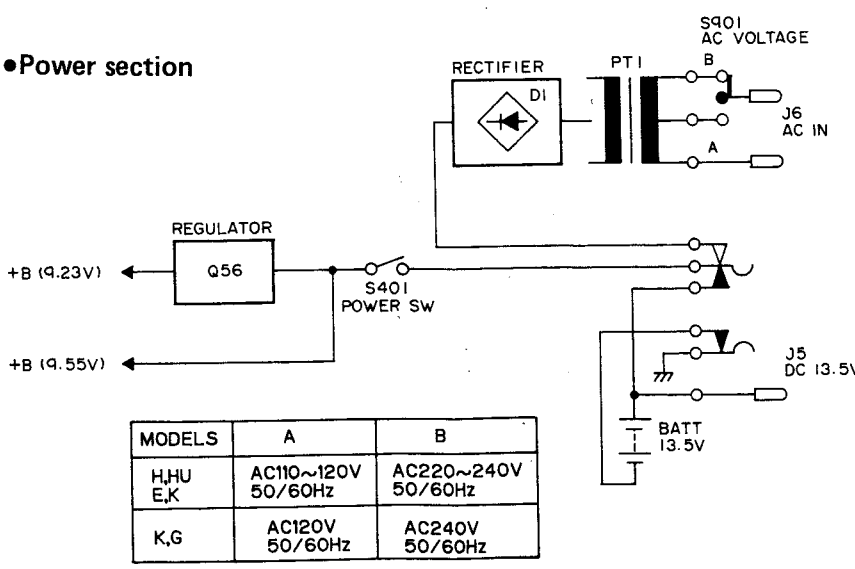
BLOCK DIAGRAM-1

•Signal section



•Control

•Power section



| MODELS      | A                     | B                     |
|-------------|-----------------------|-----------------------|
| H,HU<br>E,K | AC110~120V<br>50/60Hz | AC220~240V<br>50/60Hz |
| K,G         | AC120V<br>50/60Hz     | AC240V<br>50/60Hz     |



# NOTES:

- 1) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals. But ( ) is with AM reception or recording. An asterisk (\*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
- 2) Resistors with no designation have a rated power of 1/8W and a tolerance of  $\pm 5\%$ .
- 3) Capacitors with no designation have a dielectric strength of less than 50WV.
- 4) The only capacitor tolerance indicated are  $\pm 5\%$  (J) and  $\pm 10\%$  (K).
- 5) Ceramic capacitor symbols:  
 - For temperature compensation (SL)  
 - High dielectric constant system (YY)  
 - High dielectric constant system (YW, YP, YZ)  
 - Semiconductor ceramic  
 - For temperature compensation (SH)
- 6) Explanation of symbols  
 - Mylar capacitor  
 - Aluminum solid capacitor  
 - Polypropylene film capacitor  
 - Bi-polarized capacitor  
 - Low-leakage capacitor  
 - Fuse resistor  
 - Nonflammable resistor  
 - Safety component symbol  
 This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.
- This schematic diagram is subject to change without notice in the interests of improved performance.

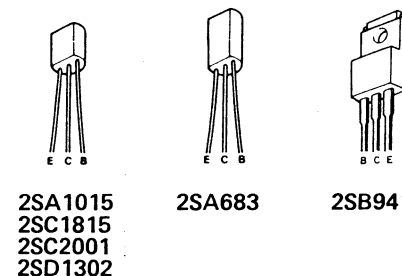
# Practical Service Figure

## <RADIO SECTION>

Sensitivity: H, HU, G models  
 (IHF, THD 3%) FM  $20 \pm 5$  dB (at 100 MHz)  
 (S/N 10 dB) SW  $20 \pm 5$  dB (at 14 MHz)  
 (S/N 10 dB) SW  $41 \pm 4$  dB (at 4 MHz)  
 (S/N 10 dB) MW  $44 \pm 5$  dB (at 1,000 kHz)  
 E, K, Z models  
 (IHF, THD 3%) FM  $20 \pm 5$  dB (at 100 MHz)  
 (S/N 10 dB) SW  $26 \pm 4$  dB (at 12 MHz)  
 (S/N 10 dB) MW  $45 \pm 5$  dB (at 1,000 kHz)  
 (S/N 10 dB) LW  $52 \pm 5$  dB (at 200 kHz)  
 Intermediate frequency: FM  $10.7 \pm 0.03$  MHz  
 AM  $468 \pm 3.5$  kHz  
 FM stereo separation: FM  $30 \pm 10$  dB (1 kHz)

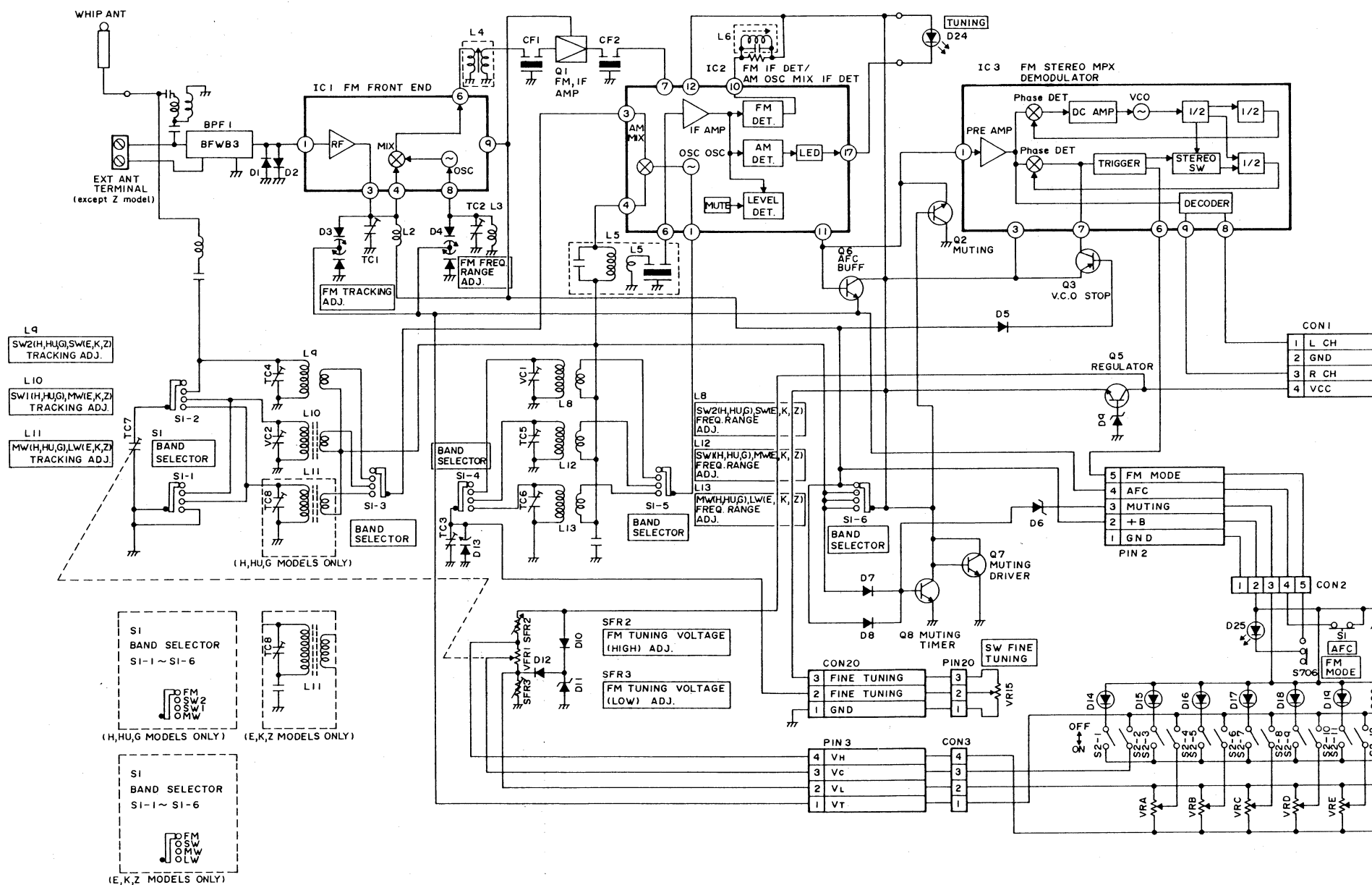
## <TAPE RECORDER SECTION>

Bias frequency: 8.5 kHz  
 Erasing ratio:  $65 \pm 5$  dB (DECK II)  
 Separation: More than 46 dB (REC/PB)  
 Channel balance: Less than 2 dB (REC/PB)  
 Distortion: Less than 3% (PB)  
 Less than 3.5% (REC/PB)  
 Signal noise ratio:  $46 \pm 3 / 45 \pm 4$  dB (DC/AC, PB)  
 $43 \pm 4 / 42 \pm 4$  dB (DC/AC, REC/PB)  
 Noise level:  $0.4 \pm 0.2$  mV /  $0.6 \pm 0.3$  mV (DC/AC MIN)  
 Wow and Flutter: Less than 0.37% (RMS) (DECK I)  
 Less than 0.35% (RMS) (DECK II)  
 Pinch roller pressure: 300 ~ 500 g (DECK I)  
 295  $\pm$  25 g (DECK II)  
 Take up torque:  $45 \pm 15$  g-cm (DECK I)  
 $40 \pm 15$  g-cm (DECK II)  
 F.FWD torque:  $110 \pm 30$  g-cm (DECK I)  
 90 ~ 150 g-cm (DECK II)  
 Rewind torque:  $110 \pm 30$  g-cm (DECK I)  
 90 ~ 150 g-cm (DECK II)  
 Back Tension: 2.5 ~ 6.5 g-cm (DECK I)  
 $3.5 \pm 1.5$  g-cm (DECK II)



## BLOCK DIAGRAM-2

### • Tuner section

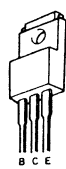




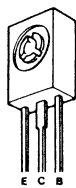
2SA1015  
2SC1815  
2SC2001  
2SD1302



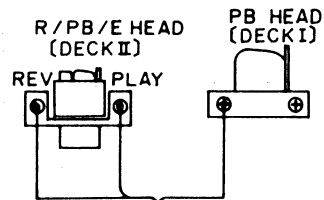
2SA683



2SB941



2SC1846



1. Azimuth Adjustment [DECK I, DECK II]  
Settings: • Test tape: TTA-317 E  
• Adjustment location: Azimuth adjustment screw  
Method: Perform adjustment on each PLAY mode and REV PLAY mode. [DECK II]

## ADJUSTMENT

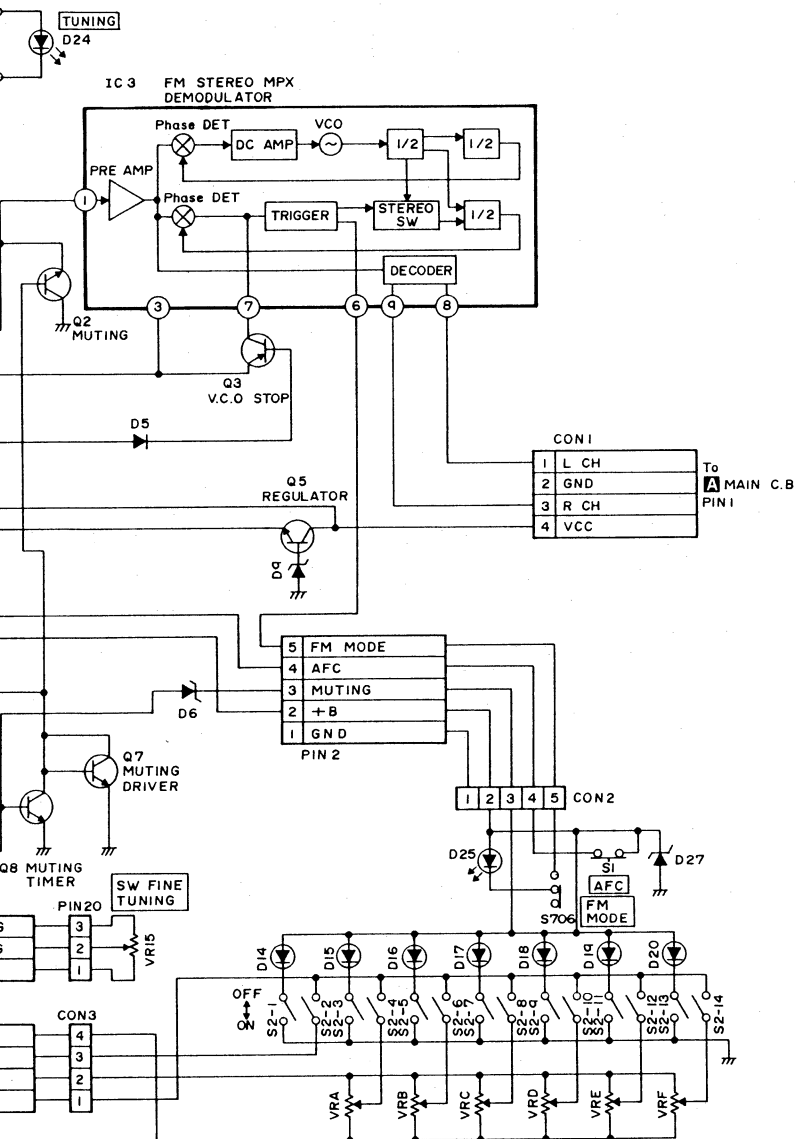
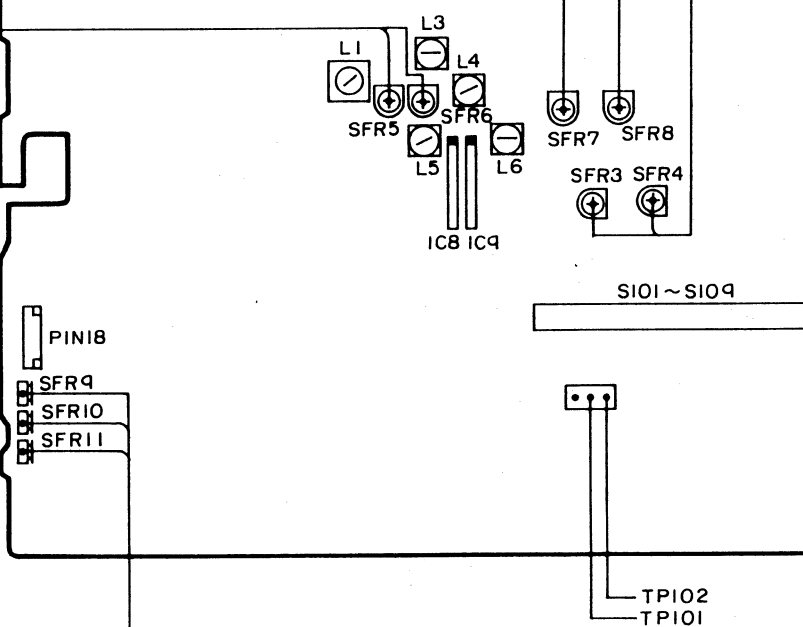
6. Bias Current Adjustment [DECK II]  
Settings: • Test tape: TTA-119 J  
• Test point: SP OUT (L, R)  
• Input: AUX (L, R)  
• Dolby NR switch: OFF  
• Adjustment location: SFR 5 (Lch)  
SFR 6 (Rch)  
Method: Load the test tape into DECK II and record 10 kHz, -30 dB signal. Playback the recorded signal and adjust so that the output is the same value as the REC current adjustment.

5. REC Current Adjustment [DECK II]  
Settings: • Test tape: TTA-119 J  
• Test point: SP OUT (L, R)  
• Input: AUX (L, R)  
• Dolby NR switch: OFF  
• Adjustment location: SFR 7 (Lch)  
SFR 8 (Rch)  
Method: Load the test tape into DECK II and record 1 kHz, -30 dB signal. Playback the recorded signal and adjust so that the output is the value as recording.

4. Dolby Level Adjustment  
Settings: • Test tape: TTA-119 J  
• Test point: T  
• Dolby NR switch: ON  
• Adjustment location: SFR 9 (Lch)  
SFR 10 (Rch)  
Method: Playback the test tape and adjust so that the output is 300 mV.

3. Dolby Level Adjustment  
Settings: • Test tape: TTA-119 J  
• Test point: T  
• Dolby NR switch: ON  
• Adjustment location: SFR 9 (Lch)  
SFR 10 (Rch)  
Method: Playback the test tape and adjust so that the output is 300 mV.

## MAIN C.B.



## 2. Speed Adjustment

| Item                 | Normal Speed          |                        | High Speed                                                       |                                                                  |
|----------------------|-----------------------|------------------------|------------------------------------------------------------------|------------------------------------------------------------------|
|                      | DECK I                | DECK II                | DECK I                                                           | DECK II                                                          |
| Adjustment procedure | ①                     | ②                      | ③                                                                | ④                                                                |
| Test tape            | TTA-111 S             | TTA-111 S              | TTA-111 H                                                        | TTA-111 H                                                        |
| Operation of button  | PLAY button of DECK I | PLAY button of DECK II | 1) PLAY buttons of DECK I & DECK II<br>2) Hi-SPEED (blue) button | 1) PLAY buttons of DECK I & DECK II<br>2) Hi-SPEED (blue) button |
| Adjustment location  | SFR 11                | SFR 10                 | Non-adjustment                                                   | SFR 9                                                            |

Method: ① Normal Speed Adjustment  
DECK I: Playback test tape and adjust the frequency.  
DECK II: Playback test tape and adjust the frequency.  
② High Speed Adjustment  
DECK I: 1) Playback test tape and depress the PLAY button.  
2) Depress the Hi-SPEED (blue) button.  
3) DECK I Confirm.  
DECK II: 1) Playback test tape and depress the PLAY button.  
2) Perform the Hi-SPEED (blue) button adjustment.  
3) Adjust the DECK II.

Note: Speed adjustment can be performed.

DECK II high speed adjustment  
DECK II normal speed adjustment  
DECK I normal speed adjustment

ADJUSTMENT

6. Bias Current Adjustment [DECK II]  
Settings: • Test tape: TTA-119 J  
• Test point: SP OUT (L, R)  
• Input: AUX (L, R)  
• Dolby NR switch: OFF  
• Adjustment location: SFR 5 (Lch)  
SFR 6 (Rch)  
Method: Load the test tape into DECK II and record 10 kHz, -30 dB signal. Playback the recorded signal and adjust so that the output is the same value as the REC current adjustment.

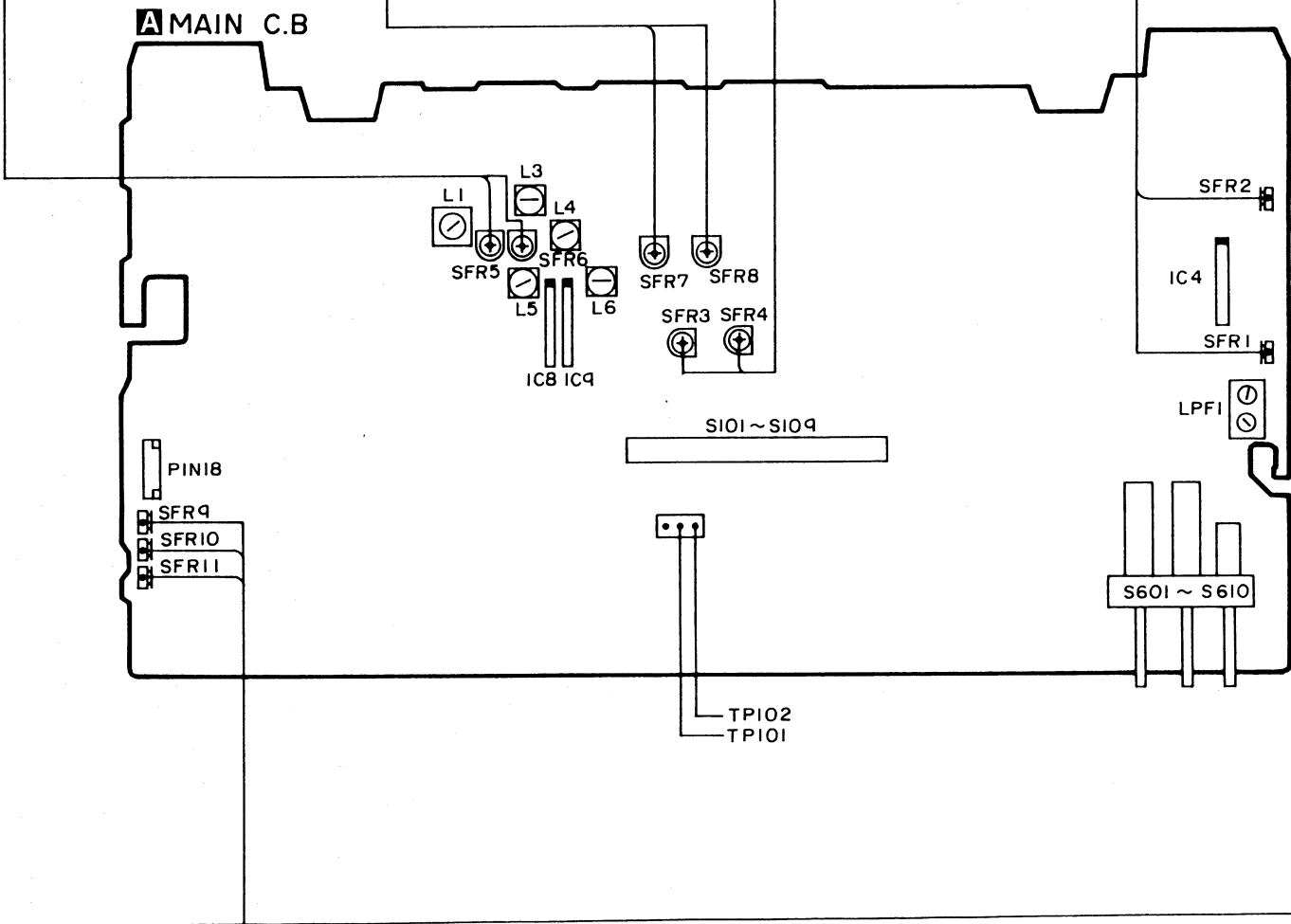
5. REC Current Adjustment [DECK II]  
Settings: • Test tape: TTA-119 J  
• Test point: SP OUT (L, R)  
• Input: AUX (L, R)  
• Dolby NR switch: OFF  
• Adjustment location: SFR 7 (Lch)  
SFR 8 (Rch)  
Method: Load the test tape into DECK II and record 1 kHz, -30 dB signal. Playback the recorded signal and adjust so that the output is the value as recording.

4. Dolby Level Adjustment [DECK II]  
Settings: • Test tape: TTA-161  
• Test point: TP 101 (Lch)  
TP 102 (Rch)  
• Dolby NR switch: OFF  
• Adjustment location: SFR 3 (Lch)  
SFR 4 (Rch)  
Method: Playback the test tape and adjust so that the output is 300 mV.

3. Dolby Level Adjustment [DECK I]  
Settings: • Test tape: TTA-161  
• Test point: TP 101 (Lch)  
TP 102 (Rch)  
• Dolby NR switch: OFF  
• Adjustment location: SFR 1 (Lch)  
SFR 2 (Rch)  
Method: Playback the test tape and adjust so that the output is 300 mV.

B HEAD  
DECK I)

DECK II)  
with adjustment screw  
PLAY mode and  
CK II)



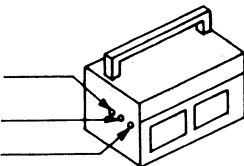
2. Speed Adjustment

| Item                 | Normal Speed          |                        | High Speed                                                       |                                                                  |
|----------------------|-----------------------|------------------------|------------------------------------------------------------------|------------------------------------------------------------------|
|                      | DECK I                | DECK II                | DECK I                                                           | DECK II                                                          |
| Adjustment procedure | ①                     | ②                      | ③                                                                | ④                                                                |
| Test tape            | TTA-111 S             | TTA-111 S              | TTA-111 H                                                        | TTA-111 H                                                        |
| Operation of button  | PLAY button of DECK I | PLAY button of DECK II | 1) PLAY buttons of DECK I & DECK II<br>2) Hi-SPEED (blue) button | 1) PLAY buttons of DECK I & DECK II<br>2) Hi-SPEED (blue) button |
| Adjustment location  | SFR 11                | SFR 10                 | Non-adjustment                                                   | SFR 9                                                            |

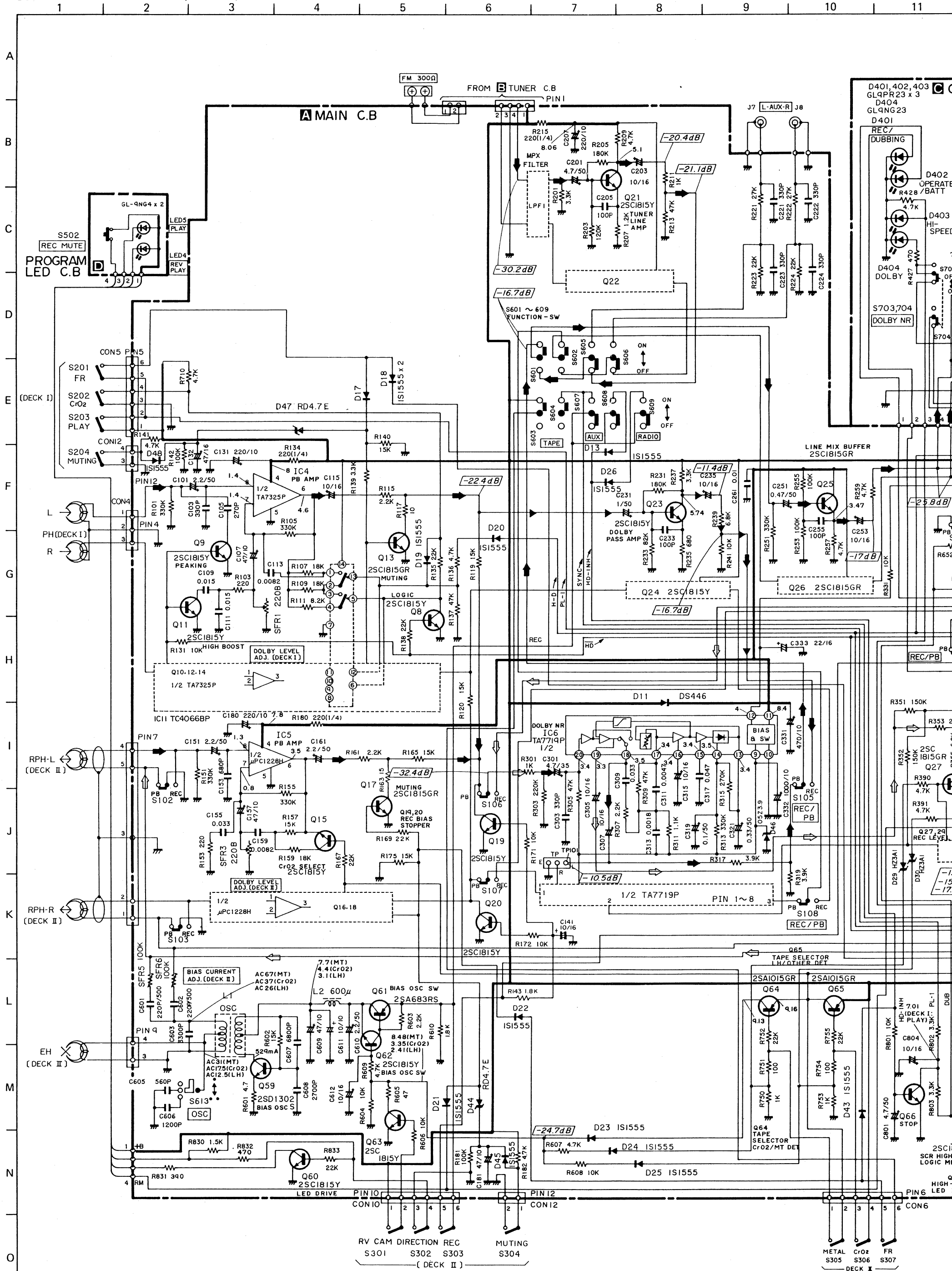
Method: ① Normal Speed Adjustment  
DECK I: Playback test tape TTA-111 S and adjust SFR 11 so that the frequency is 3 kHz.  
DECK II: Playback test tape TTA-111 S and adjust SFR 10 so that the frequency is 3 kHz.  
② High Speed Adjustment  
DECK I: 1) Playback test tape TTA-111 H on DECK I and depress the PLAY button of DECK II.  
2) Depressing the dubbing button to do not release the PLAY button, depress the Hi-SPEED button.  
3) DECK I is non-adjustment.  
Confirm speed at this time.  
DECK II: 1) Playback test tape TTA-111 H on DECK II and depress the PLAY button of DECK I.  
2) Perform DECK II to high speed operation same as the above.  
3) Adjust SFR 9 so that the speed is the same as DECK I.

Note: Speed adjustment can be performed without removing the cabinet.

DECK II high speed adjustment hole (SFR 9)  
DECK II normal speed adjustment hole (SFR 10)  
DECK I normal speed adjustment hole (SFR 11)



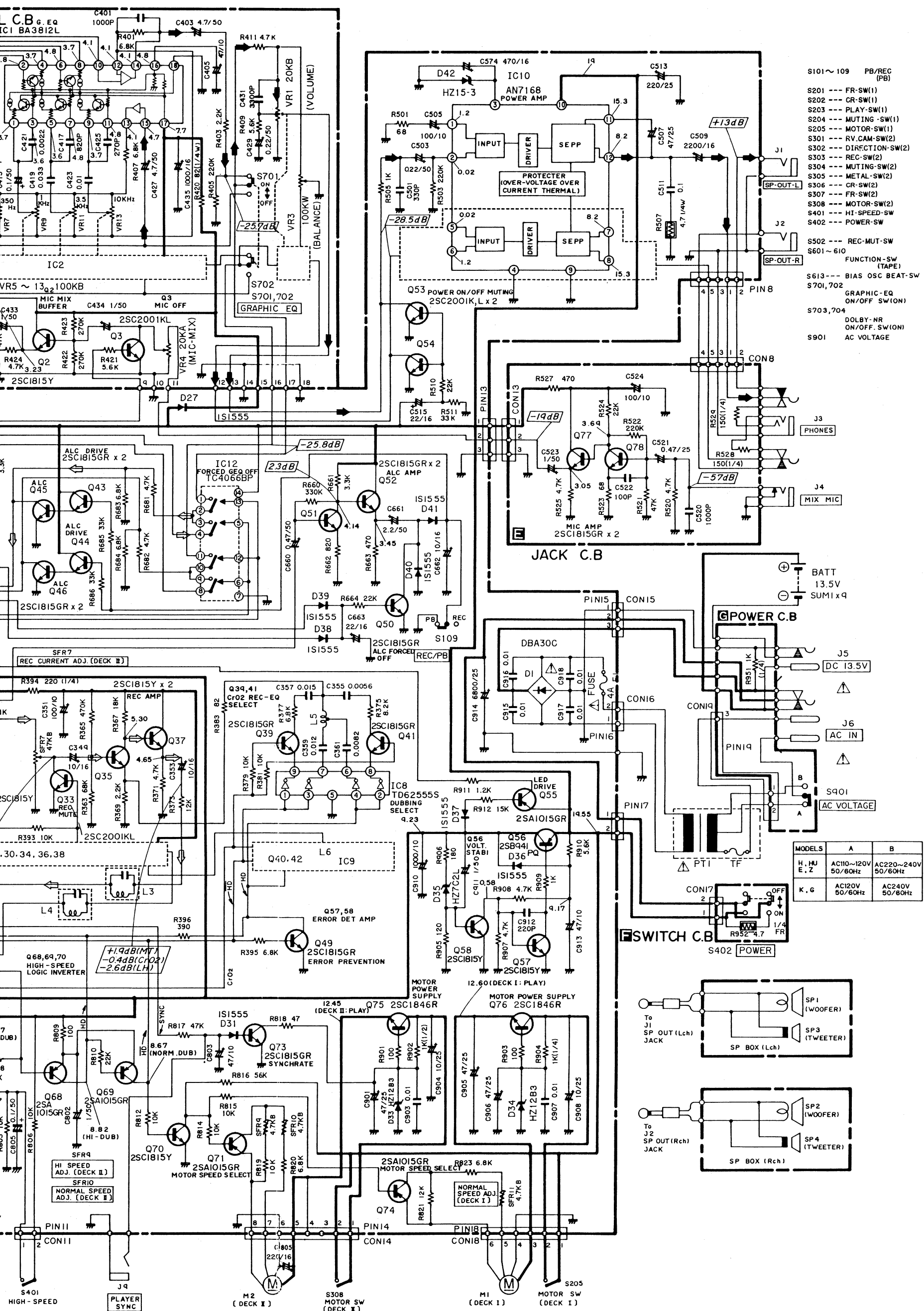
# SCHEMATIC DIAGRAM-1 (CA-W90)





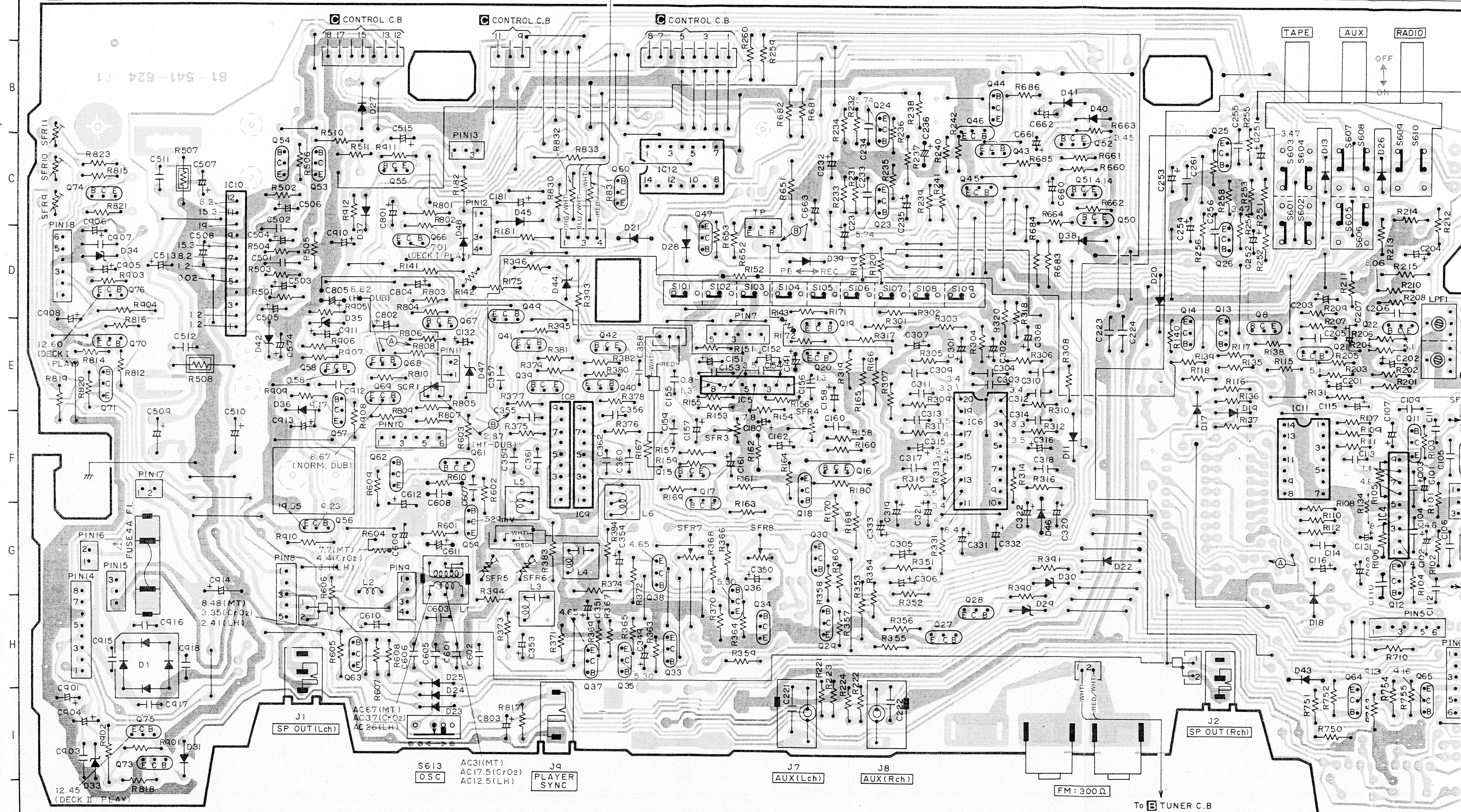








## MAIN C.B



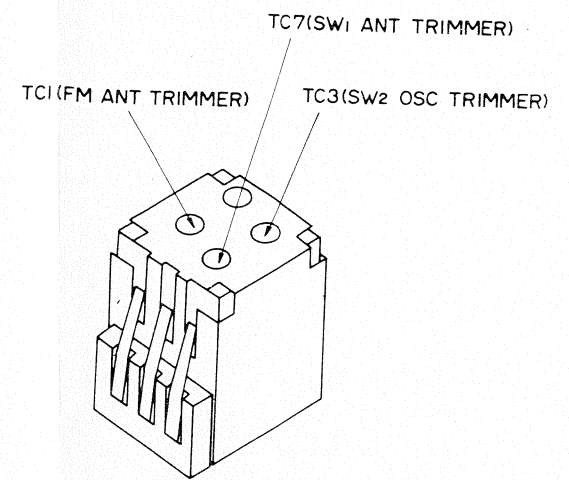
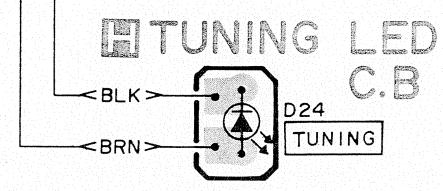
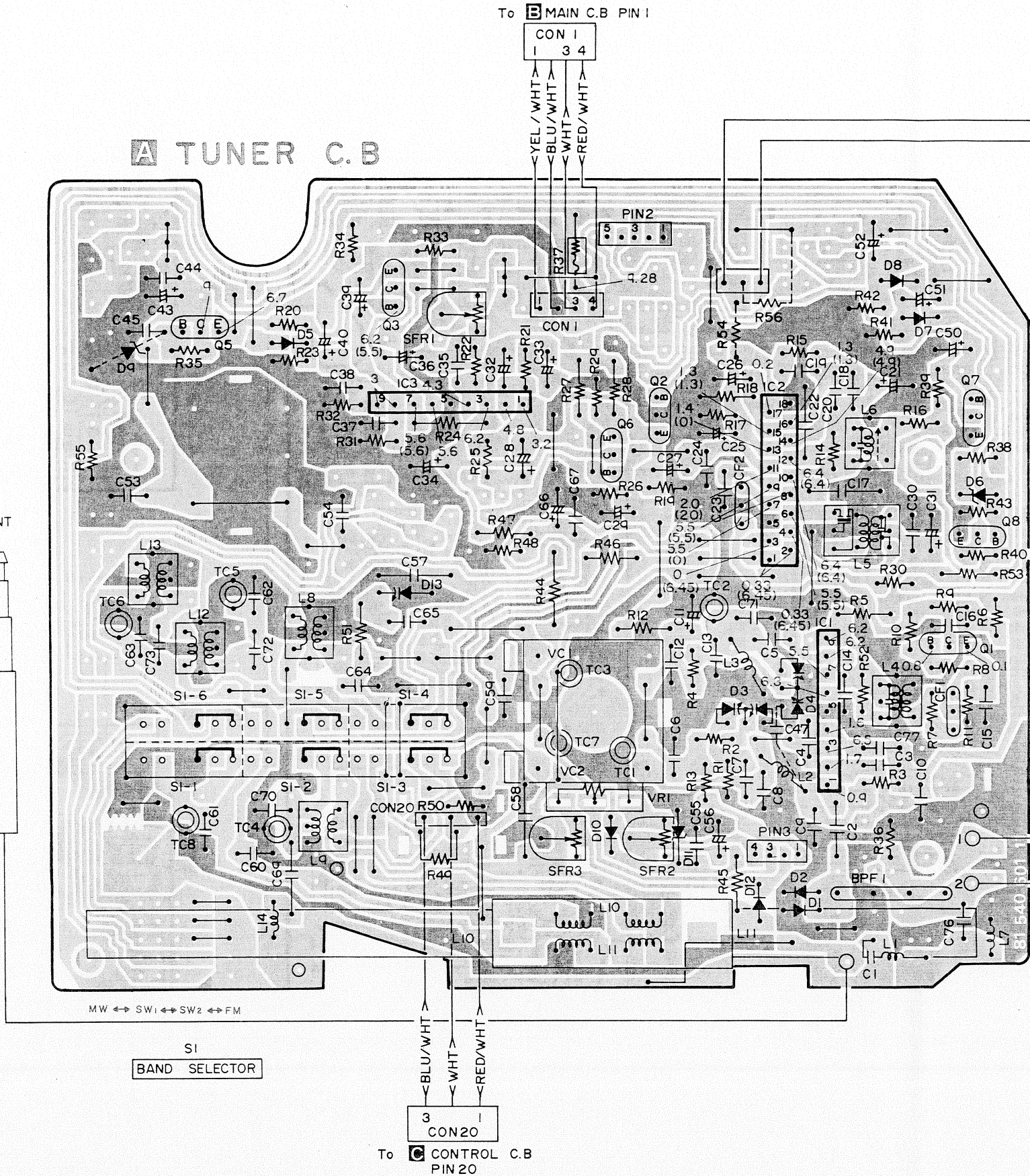
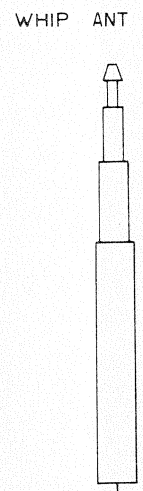
- NOTES (1)  Earth pattern  Others pattern
- (2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. An asterisk (\*) indicates that the value was measured with a vacuum-tube voltmeter during recording.



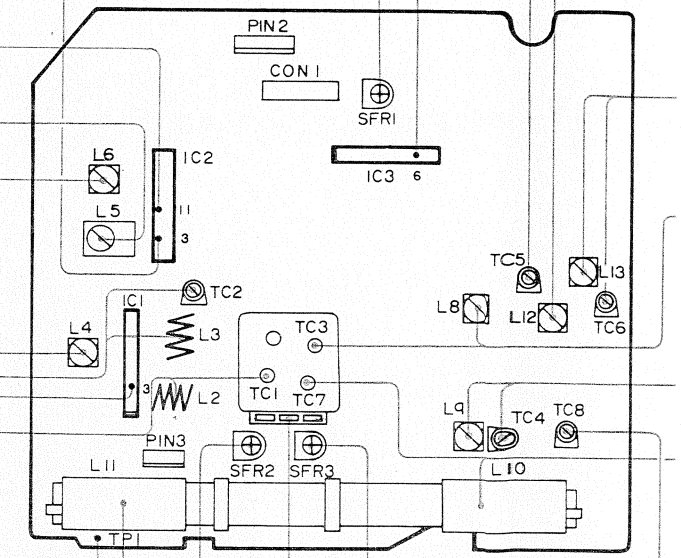




A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K



- TP3 FM IF INPUT
- TP4 FM/AM DET OUTPUT
- AM IF ADJ.  
L5..... 468kHz
- TP2 AM IF INPUT
- FM IF ADJ.  
L4, 6..... 10.7MHz
- FM FREQUENCY RANGE ADJ.  
L3..... 87MHz  
TC2..... 109MHz
- FM TRACKING ADJ.  
L2..... 88MHz  
TC1..... 108MHz
- TP1 FM TUNING VOLTAGE TEST POINT



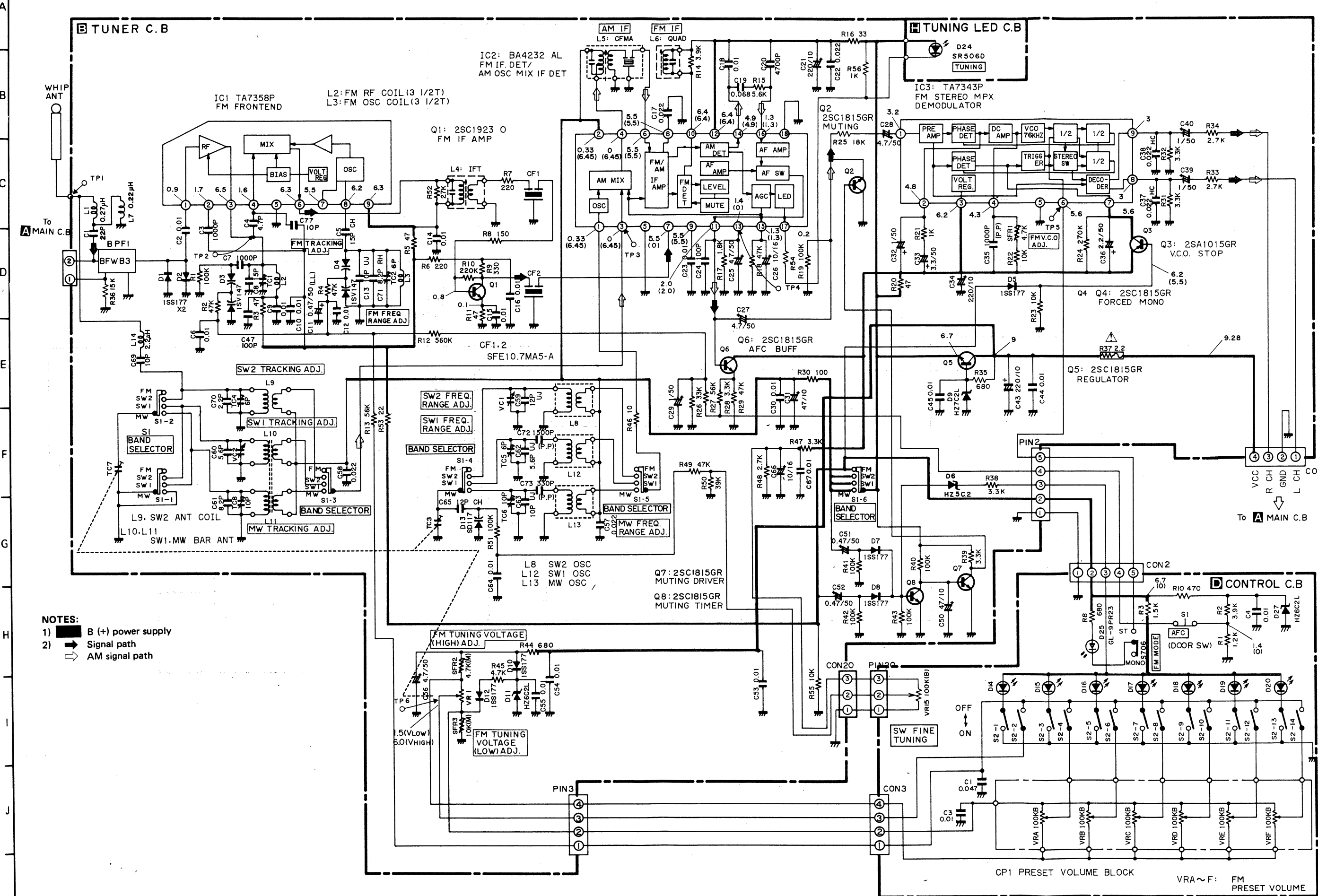
FM TUNING VOLTAGE HIGH ADJ.  
PRESET POSITION:FM MANUAL  
TEST POINT:TP6  
SFR2..... 6.0V±0.05V

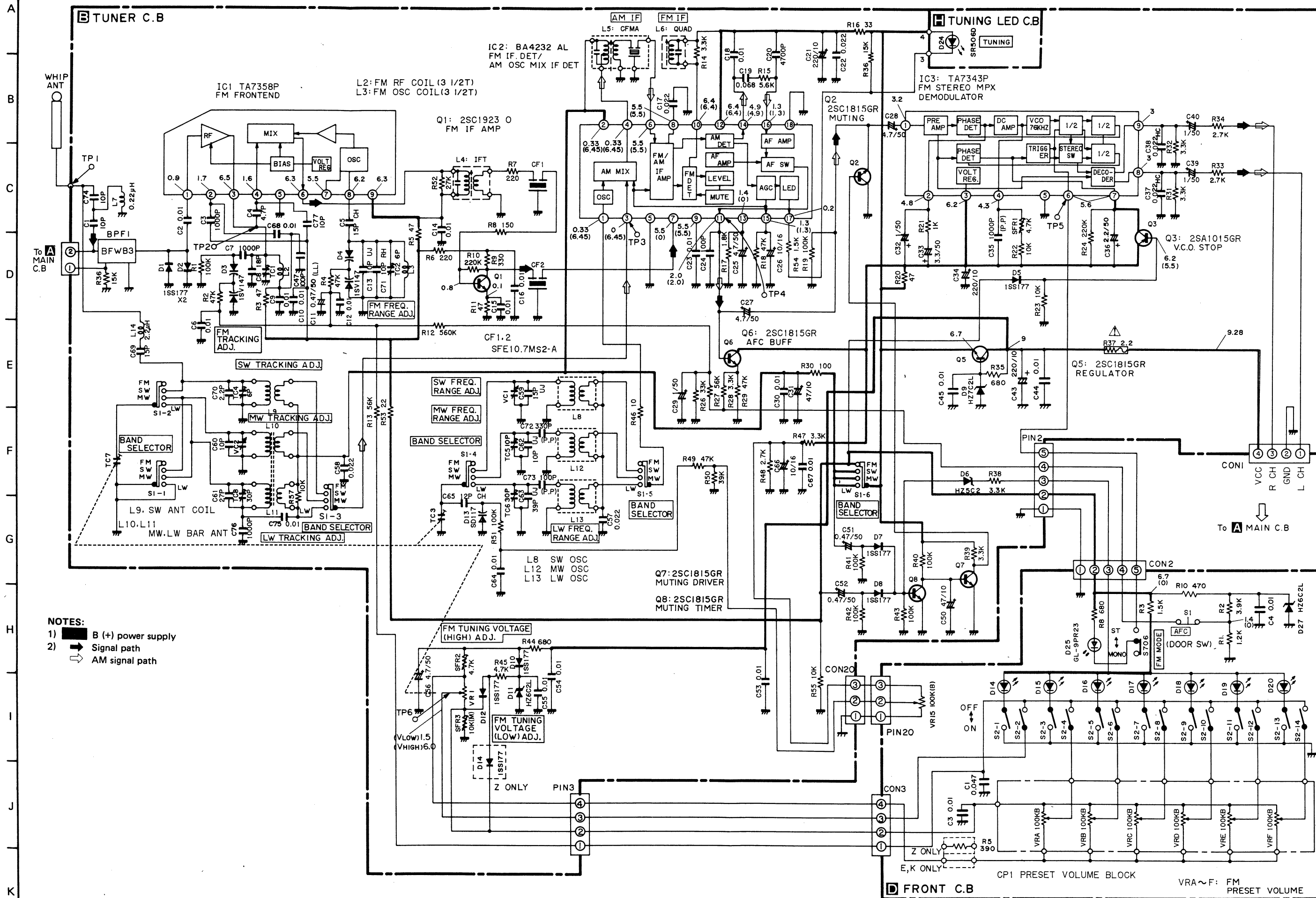
FM TUNING VOLTAGE LOW  
PRESET POSITION:FM MA  
TEST POINT:TP6  
SFR3..... 1.5V

NOTES (1) [Pattern] Earth pattern [Pattern] Others pattern  
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.  
But ( ) is with AM reception.



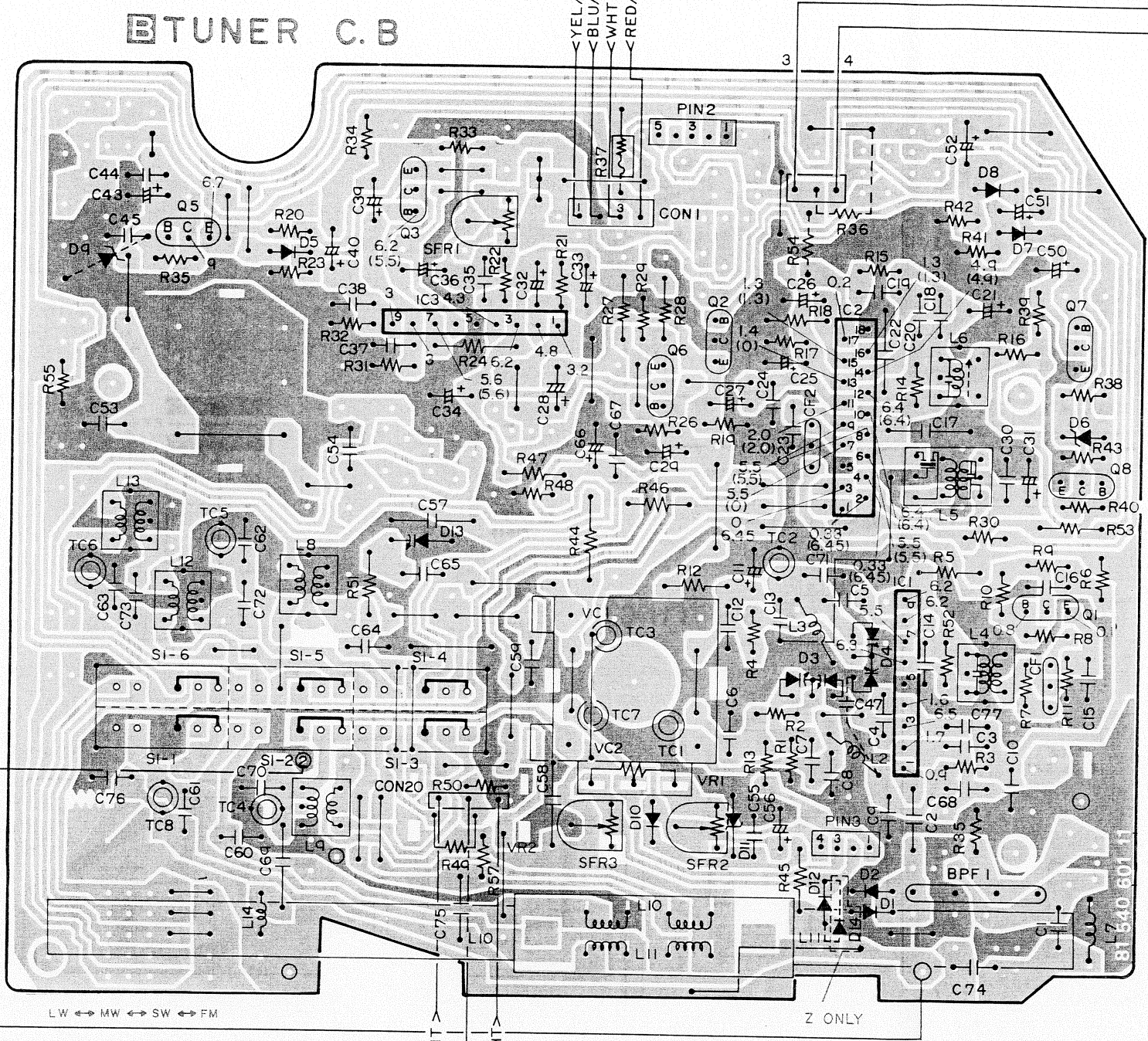








A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K

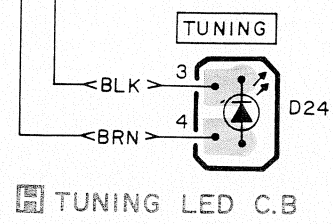


LW ↔ MW ↔ SW ↔ FM

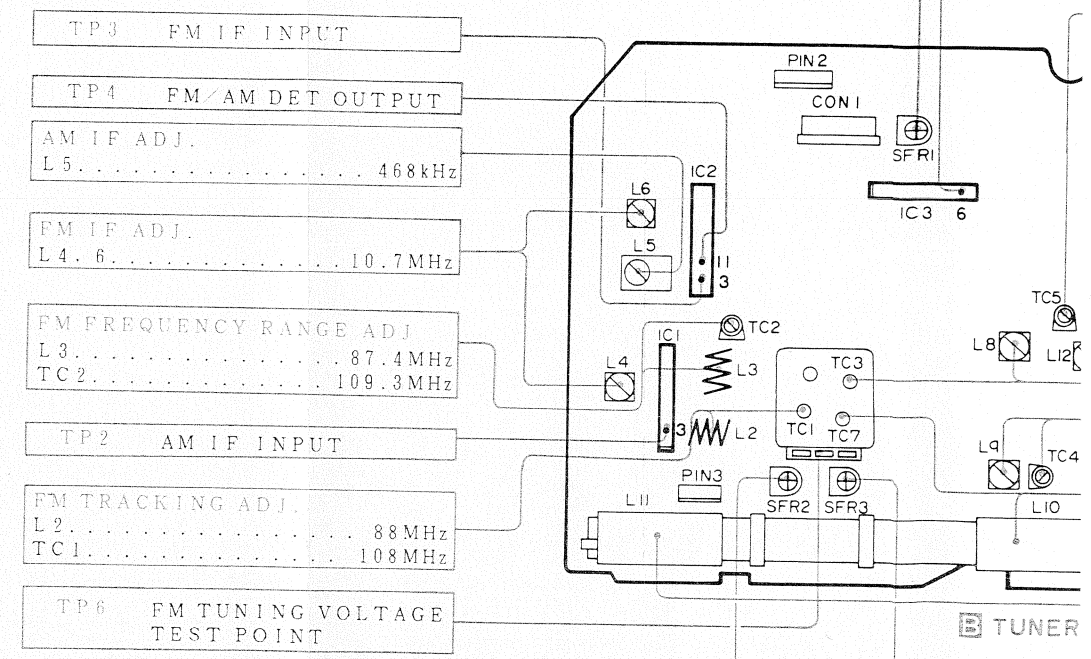
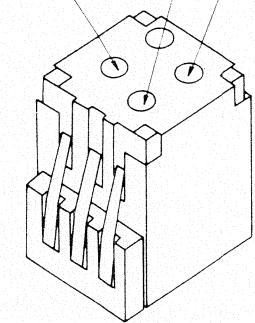
SI  
BAND SELECTOR

To CONTROL C.B.  
PIN 20

- NOTES (1) Earth pattern Others pattern  
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.  
But ( ) is with AM reception.



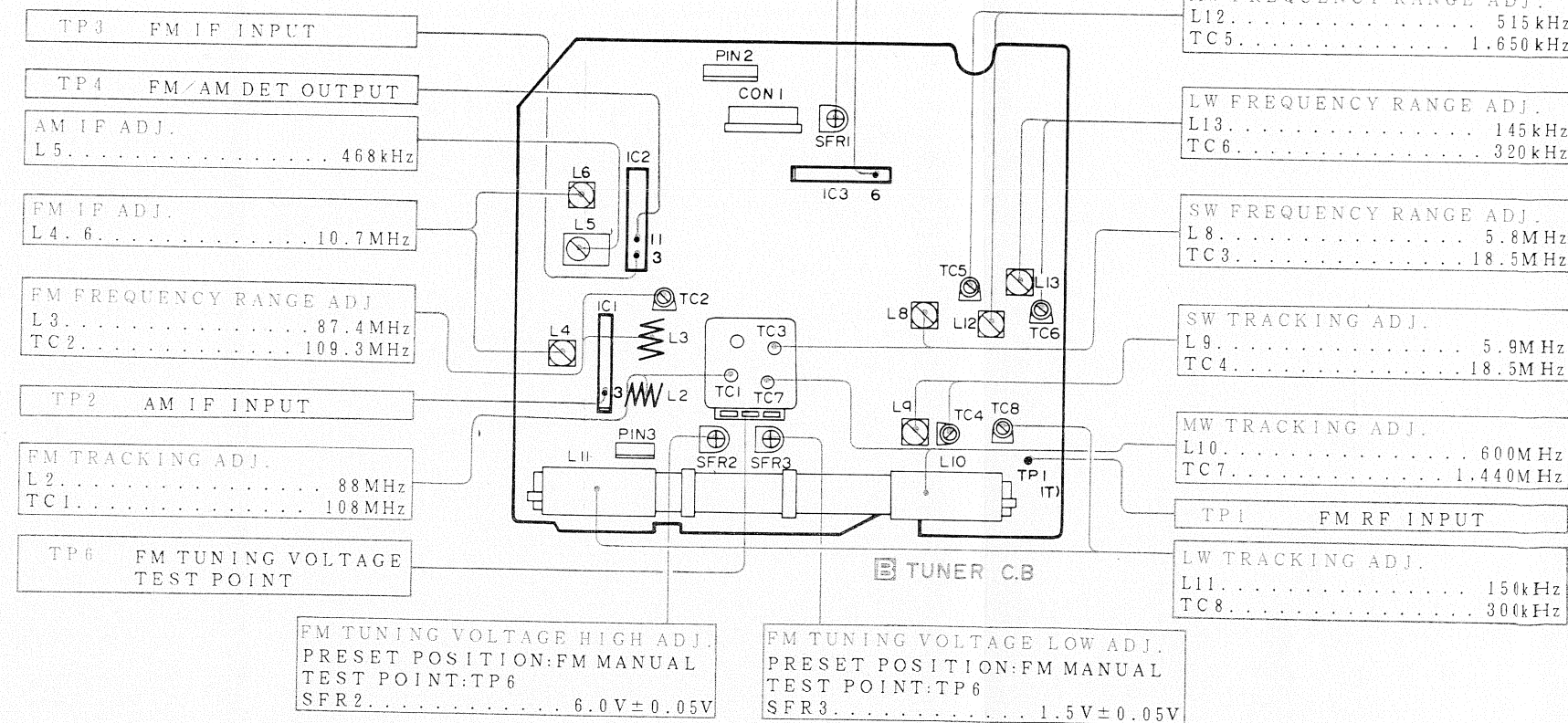
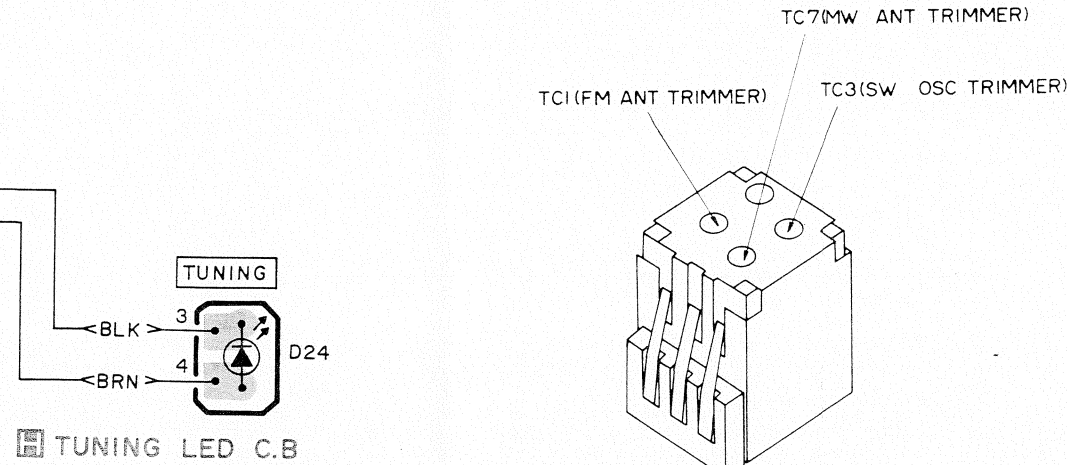
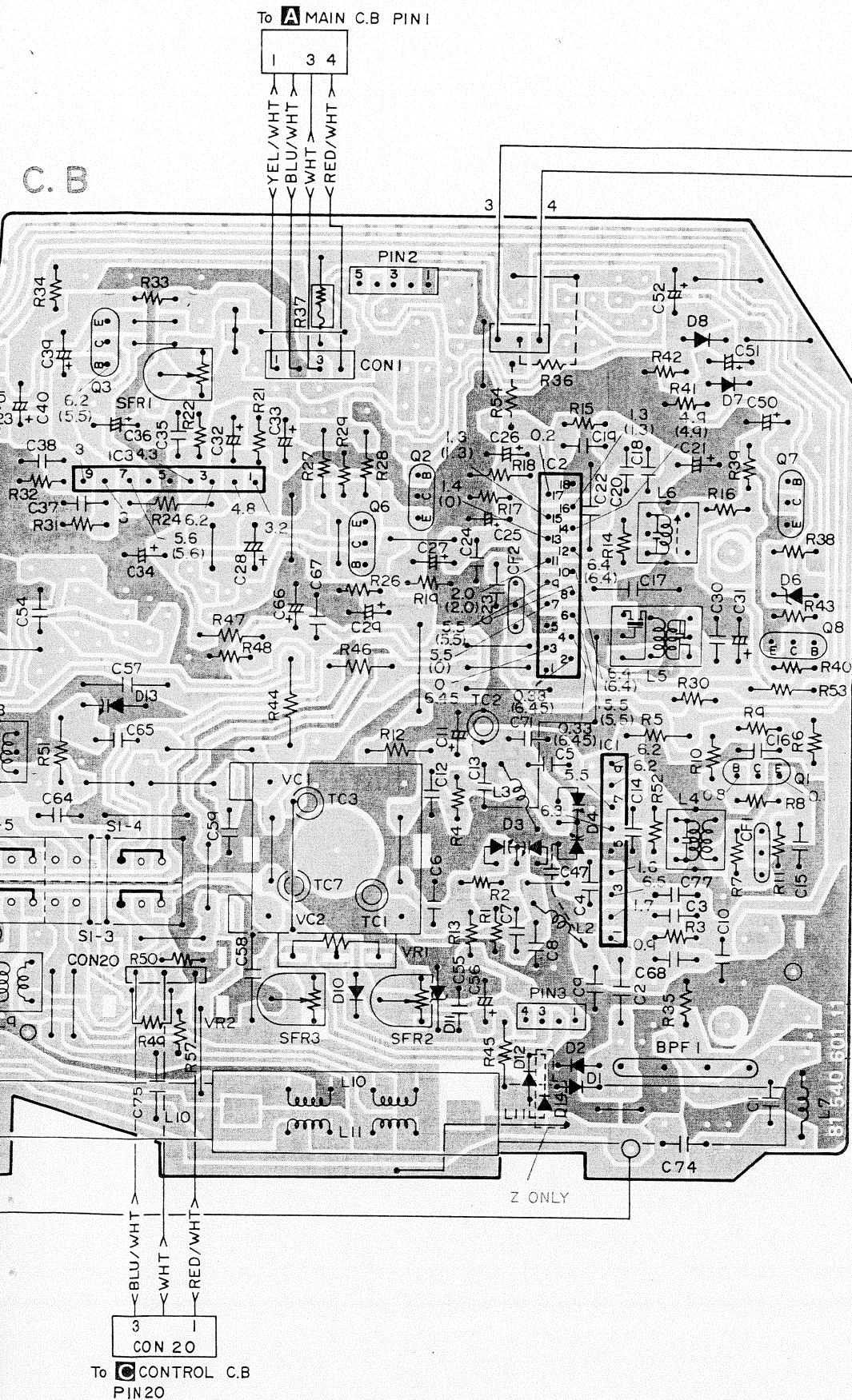
TC1 (FM ANT TRIMMER)  
TC3 (SW OSC TRIMMER)  
TC7 (MW ANT TRIMMER)



FM TUNING VOLTAGE HIGH ADJ.  
PRESET POSITION: FM MANUAL  
TEST POINT: TP6  
SFR2..... 6.0V ± 0.05V

FM TUNING VOLT  
PRESET POSITIC  
TEST POINT: TP6  
SFR3.....

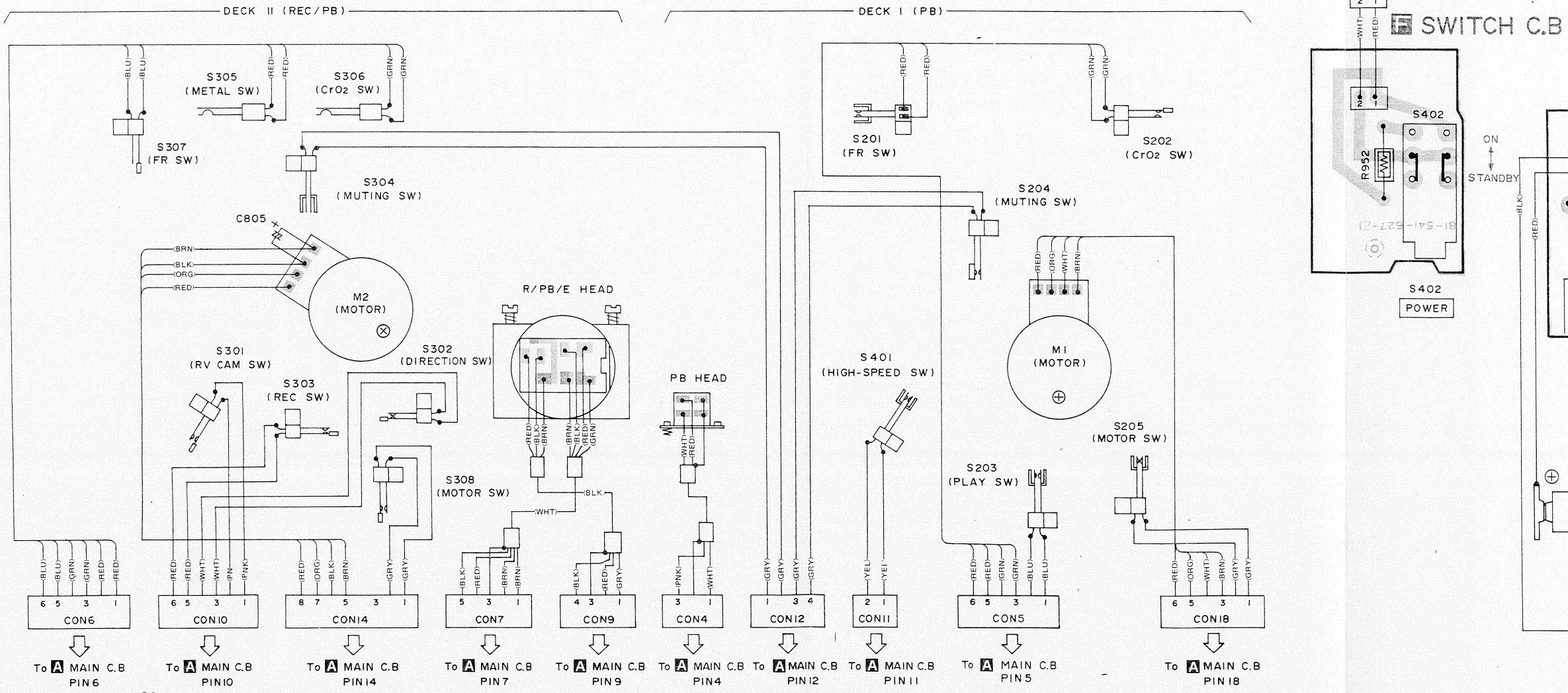
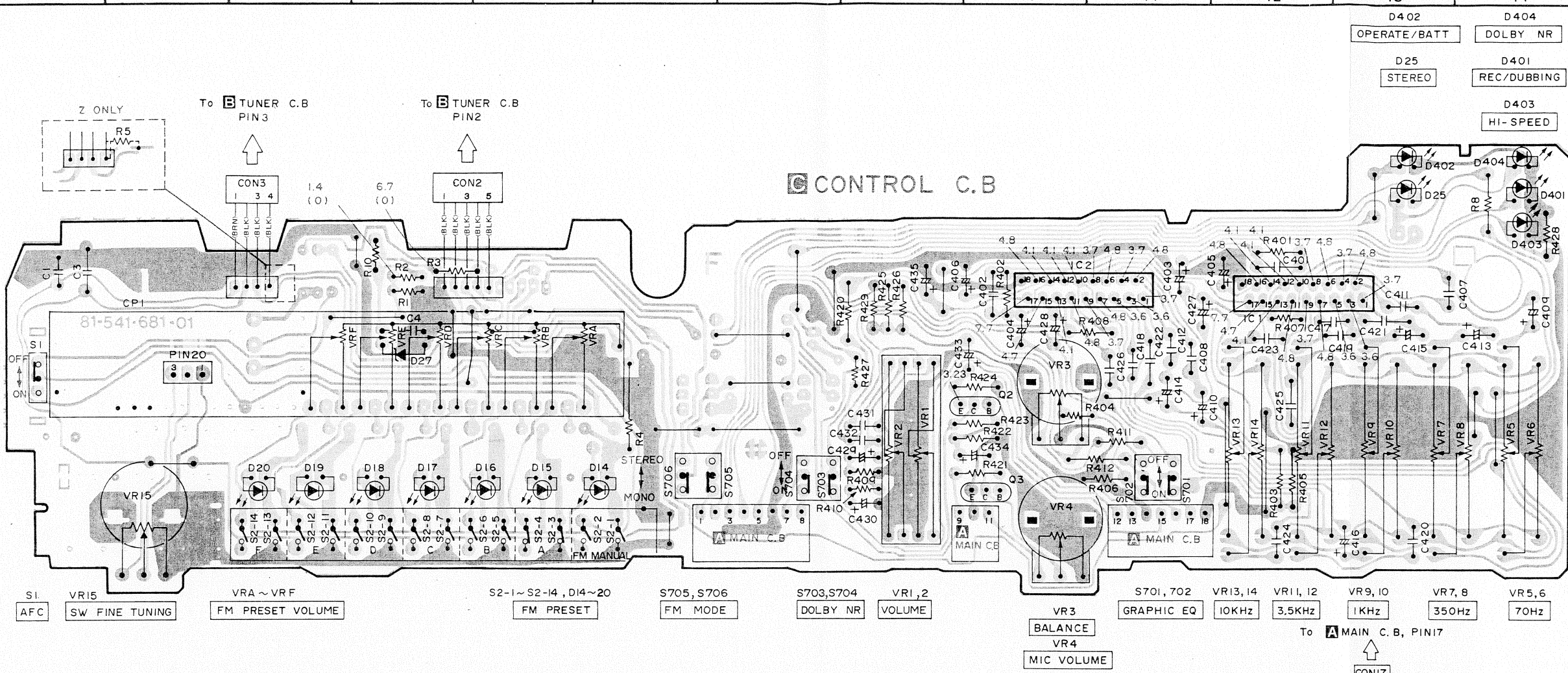




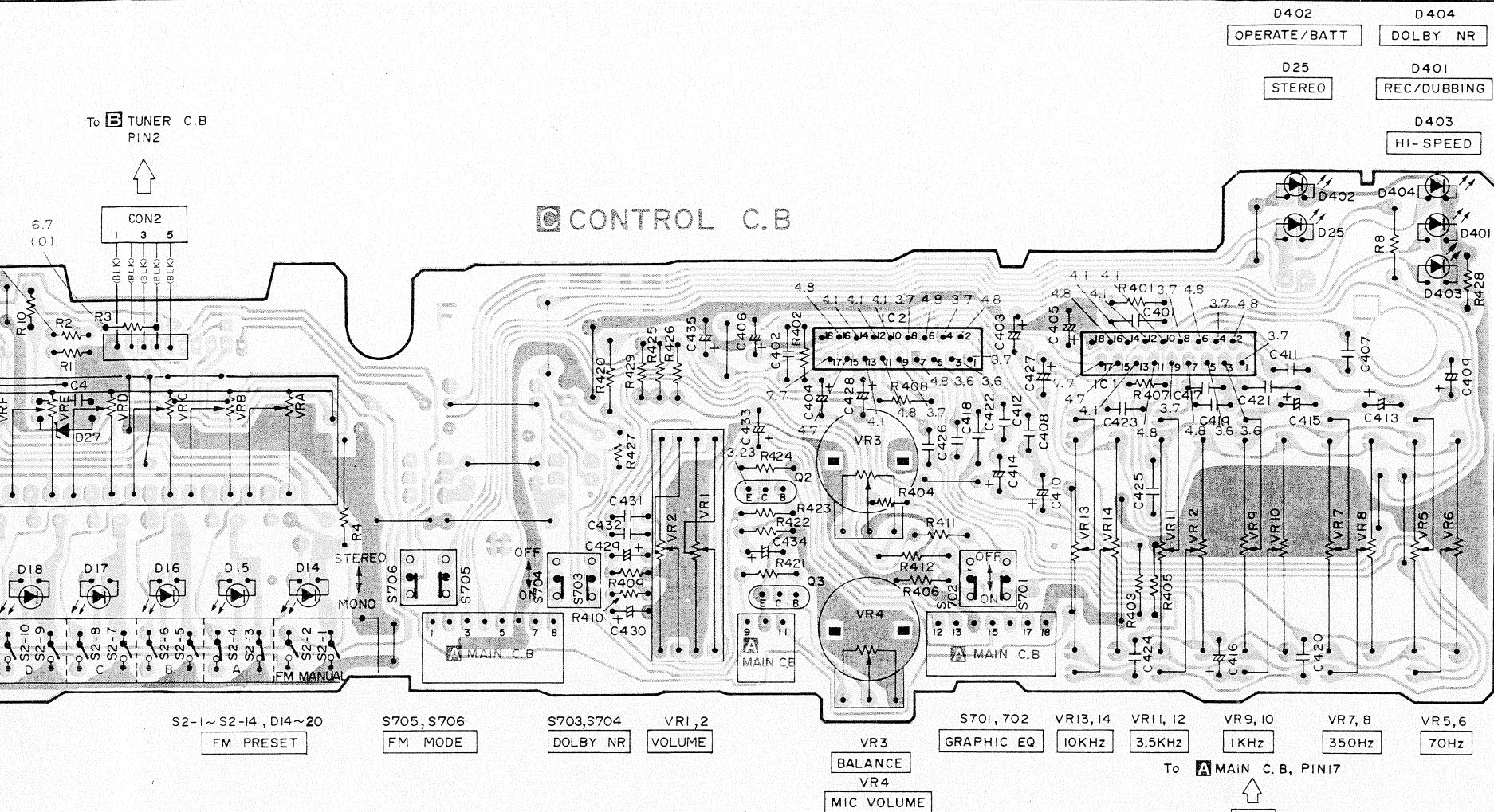
measured with a tester (20 K ohms/V DC) when there are no signals.



- NOTES**
- (1)  Earth pattern 
  - (2) The voltage is the reference when there are no signals. / with a vacuum-tube voltmeter

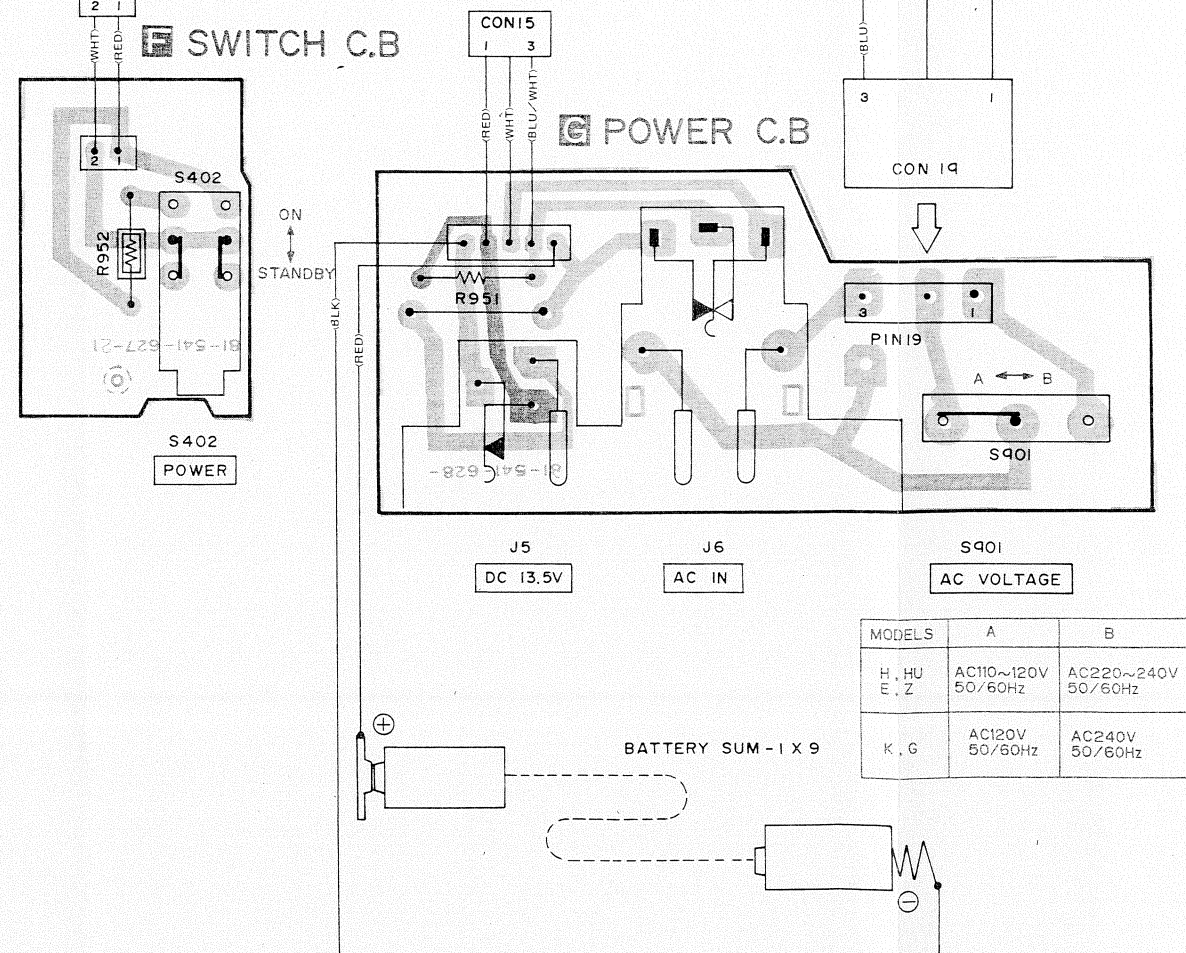
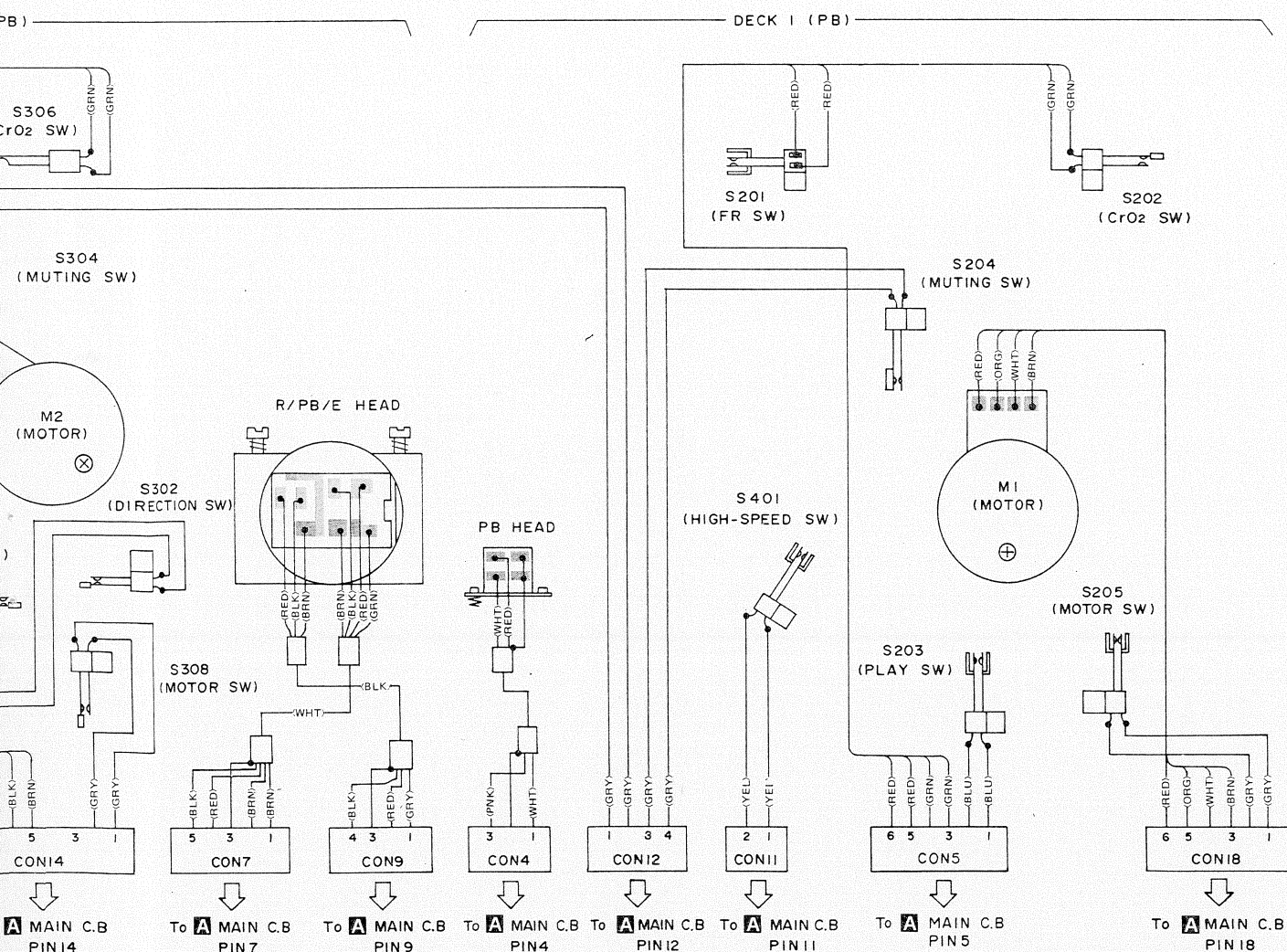






# NOTES

- (1) Earth pattern Others pattern
- (2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. An asterisk (\*) indicates that the value was measured with a vacuum-tube voltmeter during recording.



| MODELS        | A                     | B                     |
|---------------|-----------------------|-----------------------|
| H, HU<br>E, Z | AC110~120V<br>50/60Hz | AC220~240V<br>50/60Hz |
| K, G          | AC120V<br>50/60Hz     | AC240V<br>50/60Hz     |



# DISASSEMBLY INSTRUCTIONS

## 1. Front Cabinet Removal

- 1) Remove the 8 screws of the rear cabinet.
- 2) Remove the 2 knobs (REVERSE MODE and DIRECTION knobs).
- 3) Open the cassette lid to detach the front cabinet upward.

## 2. Main C.B. Removal

- 1) Remove the fixing nylon-rivet to pull out the circuit board frontward. (See Figure-1)

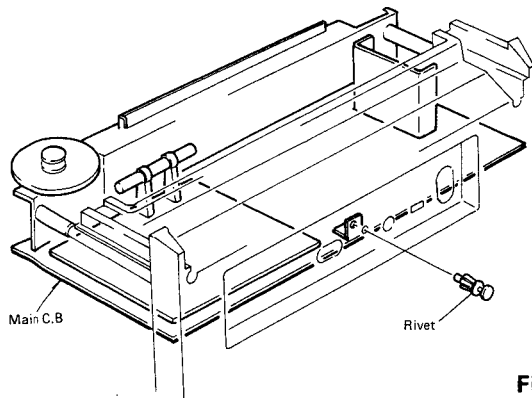


Fig. 1

## 3. Mechanism Removal

- 1) Remove the 4 red screws (a~d). (See Figure-2)
- 2) Slide the MS circuit board in the direction of the arrow to remove the red screw (e). (See Figure-2)

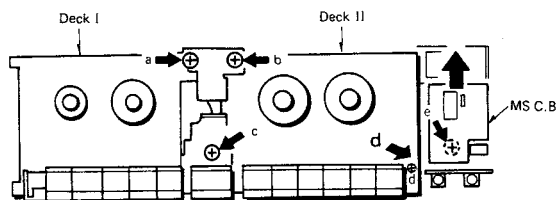


Fig. 2

## 4. Dubbing Chassis Removal

- 1) Remove the mounting screw to detach the detection E-spring and detection lever. (See Figure-3)

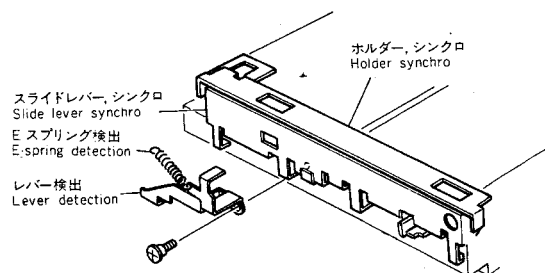


Fig. 3

- 2) Remove the 3 screws. (See Figure-4)

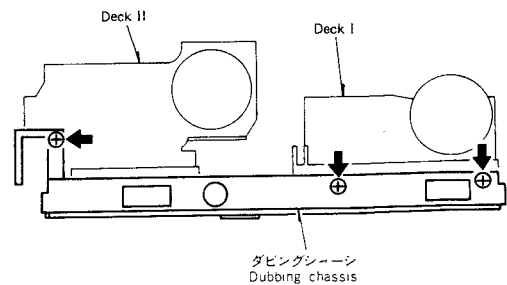


Fig. 4

Note) Set the synchro lever to the illustrated position by sliding the synchro slide lever, when mounting the dubbing chassis.

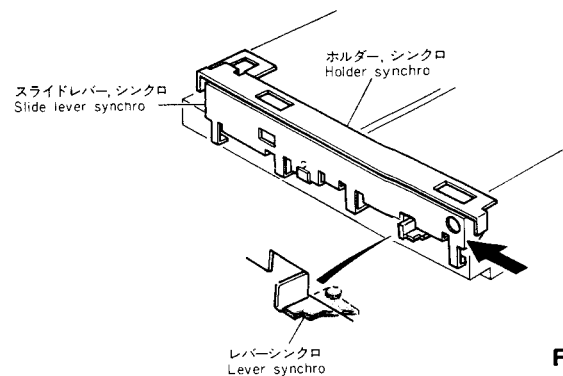


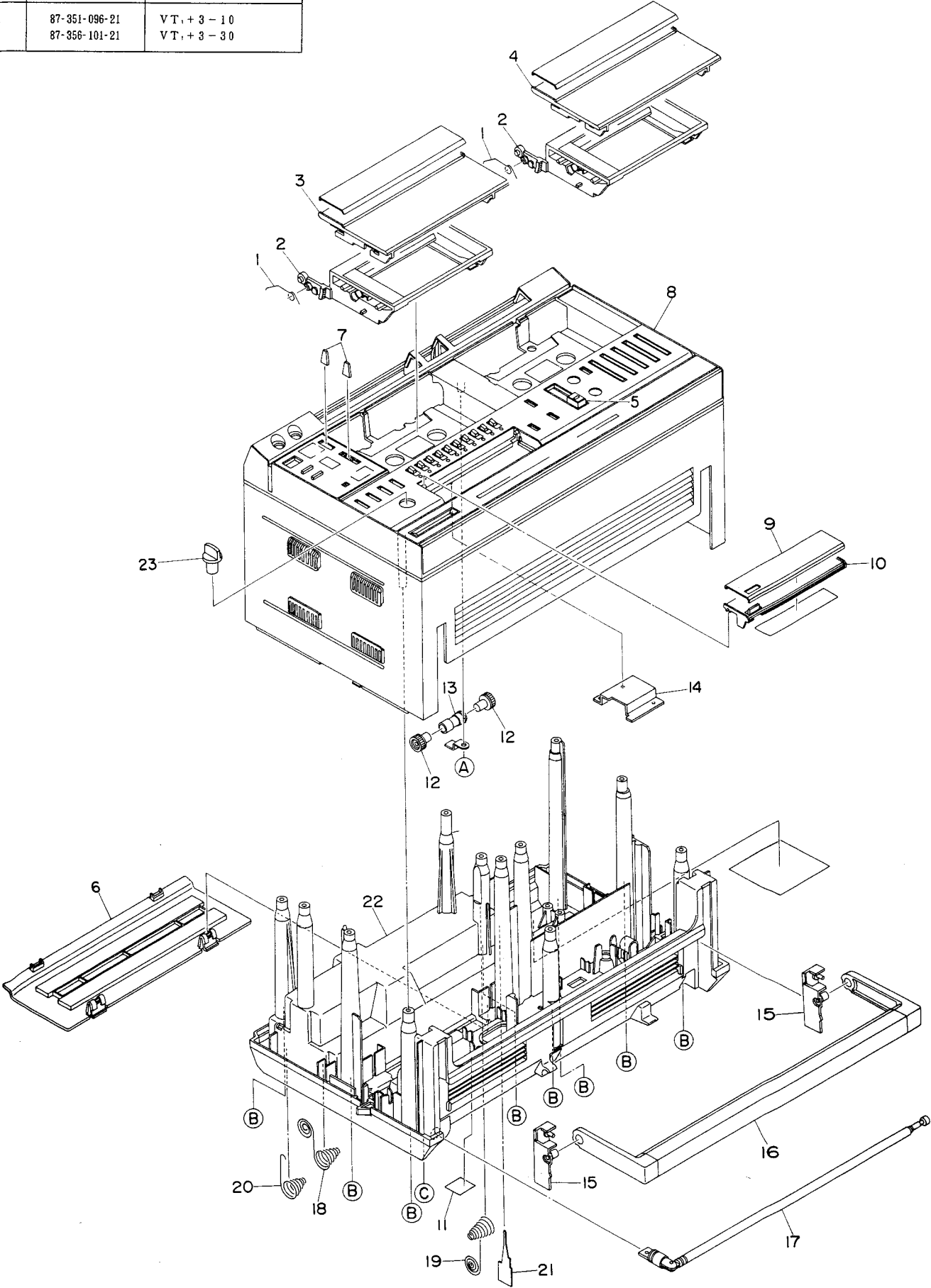
Fig. 5

EXPLODED VIEW-I

1 2 3 4 5 6 7

| Ref. No. | Part No.      | Description  |
|----------|---------------|--------------|
| A        | 87-351-096-21 | VT, + 3 - 10 |
| B        | 87-356-101-21 | VT, + 3 - 30 |

A  
B  
C  
D  
E  
F  
G  
H  
I  
J





# PARTS LIST

- ※mark in this part list shows exclusive part
- ★mark means less required items and availabilities may be limited.
- [S]=SILVER, [B]=BLACK

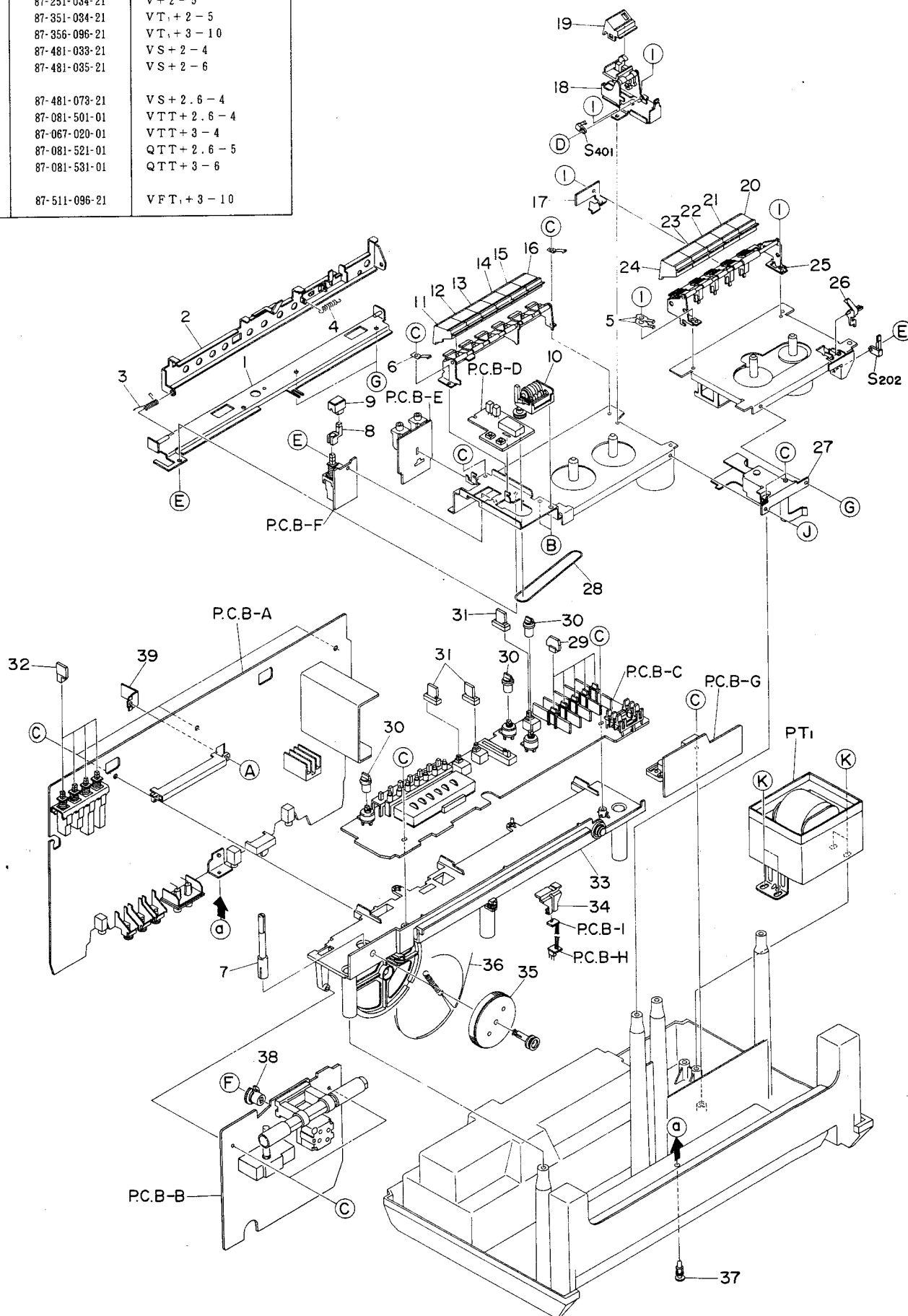
## MECHANICAL PARTS LIST

| Part No.<br>changed to | Ref. No. | Part No.    | Description                                | Common<br>Model | Q'ty |  |
|------------------------|----------|-------------|--------------------------------------------|-----------------|------|--|
|                        | 1-1      | ★81-541-224 | T-SPRING, CASSETTE UP                      | ※               | 2    |  |
|                        | 1-2      | 81-539-033  | CASSETTE BOX Ass'y                         |                 | 2    |  |
|                        | 1-3      | 09-018-131  | CASSETTE WINDOW R Ass'y                    | ※               | 1    |  |
|                        | 1-4      | 09-018-130  | CASSETTE WINDOW L Ass'y                    | ※               | 1    |  |
|                        | 1-5      | ★81-541-013 | KNOB, VOLUME                               | ※               | 1    |  |
|                        | 1-6      | 81-541-034  | LID BATTERY Ass'y [S]                      | ※               | 1    |  |
|                        |          | 81-541-140  | LID BATTERY Ass'y [B]                      | ※               | 1    |  |
|                        | 1-7      | 82-138-057  | KNOB, TOGGLE                               | FX-W20          | 2    |  |
|                        | 1-8      | ★81-541-080 | FRONT CABINET Ass'y [S]<br>(H, HU, G only) | ※               | 1    |  |
|                        |          | ★81-541-172 | FRONT CABINET Ass'y [S] (U, C only)        | ※               | 1    |  |
|                        |          | ★81-541-078 | FRONT CABINET Ass'y [S] (E, K only)        | ※               | 1    |  |
|                        |          | ★81-541-199 | FRONT CABINET Ass'y [S] (Z only)           | ※               | 1    |  |
|                        |          | ★81-541-173 | FRONT CABINET Ass'y [B]<br>(H, HU, G only) | ※               | 1    |  |
|                        |          | ★81-541-177 | FRONT CABINET Ass'y [B] (U, C only)        | ※               | 1    |  |
|                        |          | ★81-541-178 | FRONT CABINET Ass'y [B] (E, K only)        | ※               | 1    |  |
|                        |          | ★81-541-197 | FRONT CABINET Ass'y [B] (Z only)           | ※               | 1    |  |
|                        | 1-9      | ★81-541-087 | LID, PANEL [S]                             | ※               | 1    |  |
|                        |          | ★81-541-175 | LID, PANEL [B]                             | ※               | 1    |  |
|                        | 1-10     | ★81-541-020 | LID, TU [S]                                | ※               | 1    |  |
|                        |          | ★81-541-121 | LID, TU [B]                                | ※               | 1    |  |
|                        | 1-11     | ★81-541-164 | PLATE, AM [S]                              | ※               | 1    |  |
|                        |          | ★81-541-166 | PLATE, AM [B]                              | ※               | 1    |  |
|                        | 1-12     | 82-138-254  | GEAR OIL-DAMP Ass'y                        | FX-W20          | 2    |  |
|                        | 1-13     | ★81-539-232 | HOLDER, OIL-DAMP                           |                 | 1    |  |
|                        | 1-14     | ★81-541-161 | COVER, PRISET                              | ※               | 1    |  |
|                        | 1-15     | ★81-541-208 | HANDLE FASTENER                            | ※               | 2    |  |
|                        | 1-16     | ★81-541-035 | HANDLE ARM Ass'y [S]                       | ※               | 1    |  |
|                        |          | ★81-541-138 | HANDLE ARM Ass'y [B]                       | ※               | 1    |  |
|                        | 1-17     | 87-043-075  | WHIP ANTENNA                               |                 | 1    |  |
|                        | 1-18     | ★81-541-216 | SPRING C, BATTERY A                        | ※               | 1    |  |
|                        | 1-19     | ★81-528-214 | SPRING C, BATTERY B                        | CA-30           | 1    |  |
|                        | 1-20     | ★81-528-215 | SPRING C, BATTERY C                        | CA-30           | 1    |  |
|                        | 1-21     | ★81-528-216 | BATTERY WR                                 | CA-30           | 1    |  |
|                        | 1-22     | ★81-541-003 | REAR CABINET Ass'y [S]                     | ※               | 1    |  |
|                        |          | ★81-541-137 | REAR CABINET Ass'y [B]                     | ※               | 1    |  |
|                        | 1-23     | 81-518-078  | KNOB, SELECTER<br>(EXCEPT FOR U, C)        | CS-W330         | 1    |  |

# EXPLODED VIEW-2

1 2 3 4 5 6 7

| Ref. No. | Part No.      | Description |
|----------|---------------|-------------|
| A        | 87-251-034-21 | V+2-5       |
| B        | 87-351-034-21 | VT,+2-5     |
| C        | 87-356-096-21 | VT,+3-10    |
| D        | 87-481-033-21 | VS+2-4      |
| E        | 87-481-035-21 | VS+2-6      |
| F        | 87-481-073-21 | VS+2.6-4    |
| G        | 87-081-501-01 | VT+2.6-4    |
| H        | 87-067-020-01 | VT+3-4      |
| I        | 87-081-521-01 | QTT+2.6-5   |
| J        | 87-081-531-01 | QTT+3-6     |
| K        | 87-511-096-21 | VFT,+3-10   |



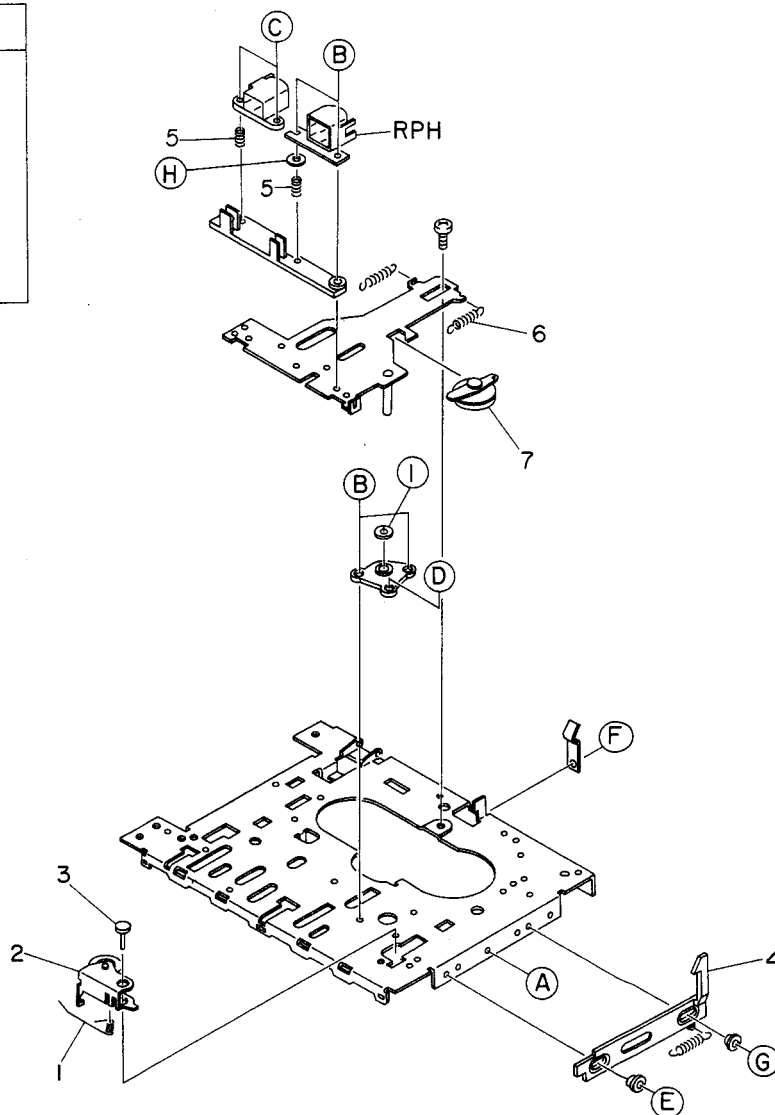
| Part No.<br>changed to | Ref. No. | Part No.    | Description                          | Common<br>Model                 | Q'ty |  |
|------------------------|----------|-------------|--------------------------------------|---------------------------------|------|--|
|                        | 2-1      | ★81-538-213 | HOLDER SYNCHRO Ass'y                 |                                 | 1    |  |
|                        | 2-2      | ★81-539-216 | SLIDE LEVER SYNCHRO Ass'y            |                                 | 1    |  |
|                        | 2-3      | ★81-538-208 | C-SPRING, SLIDE LEVER                |                                 | 1    |  |
|                        | 2-4      | ★81-539-226 | E-SPRING, EJECT                      |                                 | 1    |  |
|                        | 2-5      | ★81-541-225 | P-SPRING, NT                         | ※                               | 2    |  |
|                        | 2-6      | ★81-539-249 | P-SPRING, SYNCHRO                    |                                 | 1    |  |
|                        | 2-7      | ★81-533-286 | JOINT BAND KNOB<br>(EXCEPT FOR U, C) | CA-W 50                         | 1    |  |
|                        | 2-8      | ★82-795-206 | ROD, POWER                           |                                 | 1    |  |
|                        | 2-9      | ★81-541-038 | PUSH-BUTTON, POWER                   | ※                               | 1    |  |
|                        | 2-10     | ★87-040-178 | COUNTER                              |                                 | 1    |  |
|                        | 2-11     | ★81-541-098 | PUSH-BUTTON, PAUSE-U                 | ※                               | 1    |  |
|                        | 2-12     | ★81-541-099 | PUSH-BUTTON, STOP-U                  | ※                               | 1    |  |
|                        | 2-13     | ★81-541-100 | PUSH-BUTTON, FF-U                    | ※                               | 1    |  |
|                        | 2-14     | ★81-541-101 | PUSH-BUTTON, PLAY-U                  | ※                               | 1    |  |
|                        | 2-15     | ★81-541-102 | PUSH-BUTTON, REW-U                   | ※                               | 1    |  |
|                        | 2-16     | ★81-541-103 | PUSH-BUTTON, REC-U                   | ※                               | 1    |  |
|                        | 2-17     | ★81-539-213 | LEVER SYNCHRO Ass'y                  |                                 | 1    |  |
|                        | 2-18     | ★81-541-236 | PUSH-BUTTON HIGH Ass'y               | ※                               | 1    |  |
|                        | 2-19     | ★81-541-110 | PUSH-BUTTON, SYNCHRO-U               | ※                               | 1    |  |
|                        | 2-20     | ★81-541-107 | PUSH-BUTTON, REW-T U                 | ※                               | 1    |  |
|                        | 2-21     | ★81-541-108 | PUSH-BUTTON, PLAY-T U                | ※                               | 1    |  |
|                        | 2-22     | ★81-541-106 | PUSH-BUTTON, FF-T U                  | ※                               | 1    |  |
|                        | 2-23     | ★81-541-105 | PUSH-BUTTON, STOP-T U                | ※                               | 1    |  |
|                        | 2-24     | ★81-541-104 | PUSH-BUTTON, PAUSE-T U               | ※                               | 1    |  |
|                        | 2-25     | ★81-539-227 | BUTTON FLAME Ass'y-PLAY              |                                 | 1    |  |
|                        | 2-26     | ★82-138-209 | LEVER, CHROME                        | FX-W 20                         | 1    |  |
|                        | 2-27     | ★81-541-219 | HOLDER REC/PB Ass'y                  | ※                               | 1    |  |
|                        | 2-28     | 82-535-236  | COUNTER BELT                         |                                 | 1    |  |
|                        | 2-29     | ★81-541-024 | KNOB, GRAPHIC EQ                     | ※                               | 5    |  |
|                        | 2-30     | ★81-541-091 | KNOB, BIAS GREY                      | ※ H, HU, E, K, G, Z/3<br>U, C/2 |      |  |
|                        | 2-31     | ★81-541-049 | PUSH-BUTTON, DOLBY GREY              | ※                               | 3    |  |
|                        | 2-32     | ★81-541-023 | PUSH-BUTTON, FUNCTION                | ※ H, HU, E, K, G, Z/3<br>U, C/4 |      |  |
|                        | 2-33     | ★81-541-201 | CHASSIS TU Ass'y                     | ※                               | 1    |  |
|                        | 2-34     | ★81-533-028 | TU POINTER                           | CA-W 50                         | 1    |  |
|                        | 2-35     | ★81-533-013 | TU KNOB                              | CA-W 50                         | 1    |  |
|                        | 2-36     | ★87-096-090 | DIAL STRING 0.3                      |                                 | 1    |  |
|                        | 2-37     | ★87-084-072 | NYLON RIVET                          |                                 | 1    |  |
|                        | 2-38     | ★81-511-203 | DLAM JOINT                           |                                 | 1    |  |
|                        | 2-39     | ★81-541-210 | HOLDER, REC SW                       | ※                               | 1    |  |



# EXPLODED VIEW-3

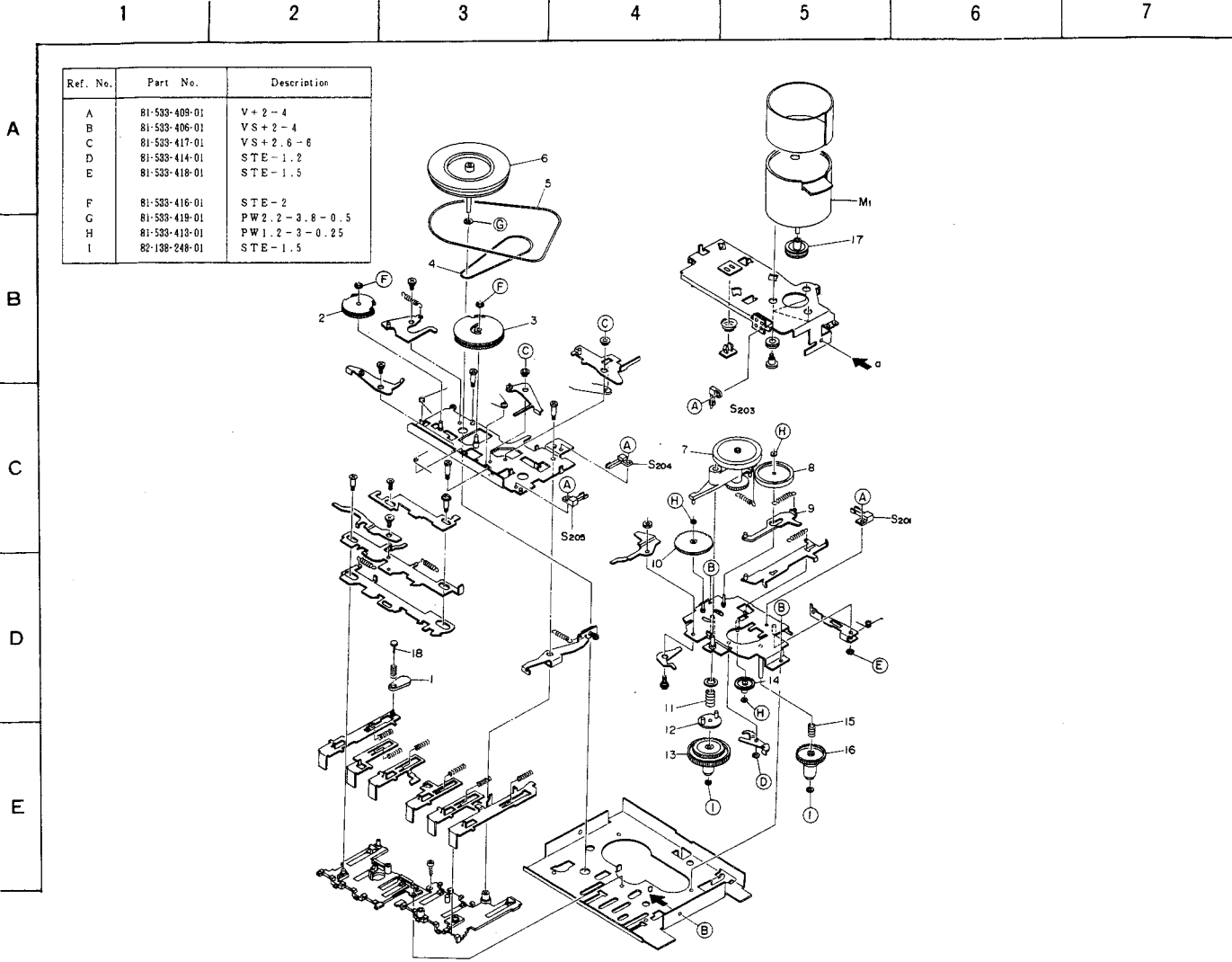
1 2 3 4 5 6 7

| Ref. No. | Part No.      | Description |
|----------|---------------|-------------|
| A        | 81-533-409-01 | V+2-4       |
| B        | 81-533-402-01 | V+2-7       |
| C        | 81-533-401-01 | V+2-8       |
| D        | 81-533-425-01 | Q+2-3       |
| E        | 81-533-410-01 | VS+2-6      |
| F        | 81-533-420-01 | VT+2.6-3    |
| G        | 81-533-408-01 | VT+2.6-5    |
| H        | 81-533-403-01 | W2.1-5-0.2  |
| I        | 81-533-422-01 | NW2-5-0.5   |



| Part No.<br>changed to | Ref. No. | Part No.    | Description                      | Common<br>Model | Q'ty |
|------------------------|----------|-------------|----------------------------------|-----------------|------|
|                        | 3-       | ★81-541-242 | MECHANISM Ass'y                  | ※               | 1    |
|                        | 3-1      | ★81-533-396 | PINCH ROLLER SPRING              | CA-W50          | 1    |
|                        | 3-2      | 81-533-309  | PINCH ROLLER ARM Ass'y           | CA-W50          | 1    |
|                        | 3-3      | ★81-533-308 | ACTUATING PLATE STOPPER          | CA-W50          | 1    |
|                        | 3-4      | ★81-533-314 | EJECT SLIDE LEVER                | CA-W50          | 1    |
|                        | 3-5      | ★81-533-301 | HEAD SPRING                      | CA-W50          | 2    |
|                        | 3-6      | ★81-533-307 | TAKE-UR ROLLER BEARING<br>SPRING | CA-W50          | 1    |
|                        | 3-7      | 81-533-306  | TAKE-UR ROLLER BEARING Ass'y     | CA-W50          | 1    |

EXPLODED VIEW-4

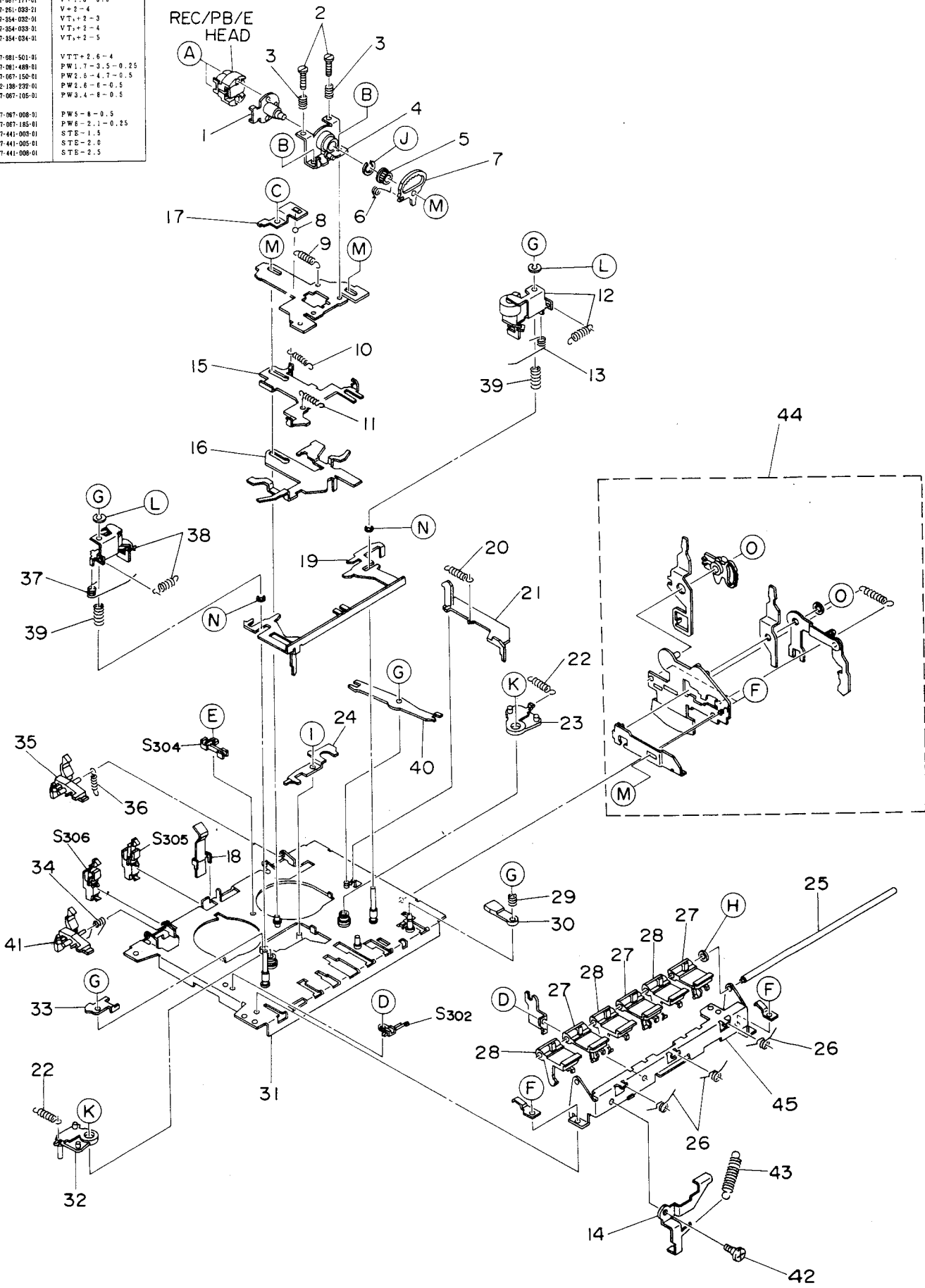


| Part No.<br>changed to | Ref. No. | Part No.    | Description                 | Common<br>Model | Q'ty |
|------------------------|----------|-------------|-----------------------------|-----------------|------|
|                        | 4-       | ★81-541-242 | MECHANISM Ass'y             | ※               | 1    |
|                        | 4-1      | 81-533-355  | PAUSE LEVER                 | CA-W50          | 1    |
|                        | 4-2      | 81-533-378  | P GEAR                      | CA-W50          | 1    |
|                        | 4-3      | 81-533-377  | M GEAR                      | CA-W50          | 1    |
|                        | 4-4      | 81-533-335  | FULL AUTO BELT              | CA-W50          | 1    |
|                        | 4-5      | 81-533-379  | MAIN BELT                   | CA-W50          | 1    |
|                        | 4-6      | 81-533-380  | FLYWHEEL Ass'y              | CA-W50          | 1    |
|                        | 4-7      | 81-533-338  | RF CLUTCH ARM Ass'y         | CA-W50          | 1    |
|                        | 4-8      | 81-533-334  | PULLEY                      | CA-W50          | 1    |
|                        | 4-9      | ★81-533-332 | LEVER, DETECTION            | CA-W50          | 1    |
|                        | 4-10     | 81-533-336  | GEAR, CAM                   | CA-W50          | 1    |
|                        | 4-11     | ★81-533-326 | DETECTION PEACE SPRING      | CA-W50          | 1    |
|                        | 4-12     | ★81-533-325 | DETECTION PEACE             | CA-W50          | 1    |
|                        | 4-13     | 81-533-324  | TAKE-UP REEL PLATFORM Ass'y | CA-W50          | 1    |
|                        | 4-14     | 81-533-327  | GEAR, FF                    | CA-W50          | 1    |
|                        | 4-15     | ★81-533-323 | BACK TENSION SPRING         | CA-W50          | 1    |
|                        | 4-16     | 81-533-322  | SUPPLY REEL PLATFORM Ass'y  | CA-W50          | 1    |
|                        | 4-17     | 81-533-424  | MOTOR PULLEY                | CA-W50          | 1    |
|                        | 4-18     | ★81-533-356 | STOPPER, P                  | CA-W50          | 1    |

EXPLODED VIEW-5

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|

| Ref. No. | Part No.      | Description    |
|----------|---------------|----------------|
| A        | 87-067-177-01 | V+1.6-5.5      |
| B        | 87-261-039-21 | V+2-4          |
| C        | 87-354-032-01 | VT+2-3         |
| D        | 87-354-033-01 | VT+2-4         |
| E        | 87-354-034-01 | VT+2-5         |
| F        | 87-081-501-01 | VTT+2.6-4      |
| G        | 87-081-489-01 | PW1.7-3.5-0.25 |
| H        | 87-067-150-01 | PW2.6-4.7-0.5  |
| I        | 92-138-232-01 | PW2.6-E-0.5    |
| J        | 87-067-105-01 | PW3.4-8-0.5    |
| K        | 87-067-008-01 | PW5-8-0.5      |
| L        | 87-067-185-01 | PW6-2.1-0.25   |
| M        | 87-441-003-01 | STE-1.5        |
| N        | 87-441-005-01 | STE-2.0        |
| O        | 87-441-008-01 | STE-2.5        |



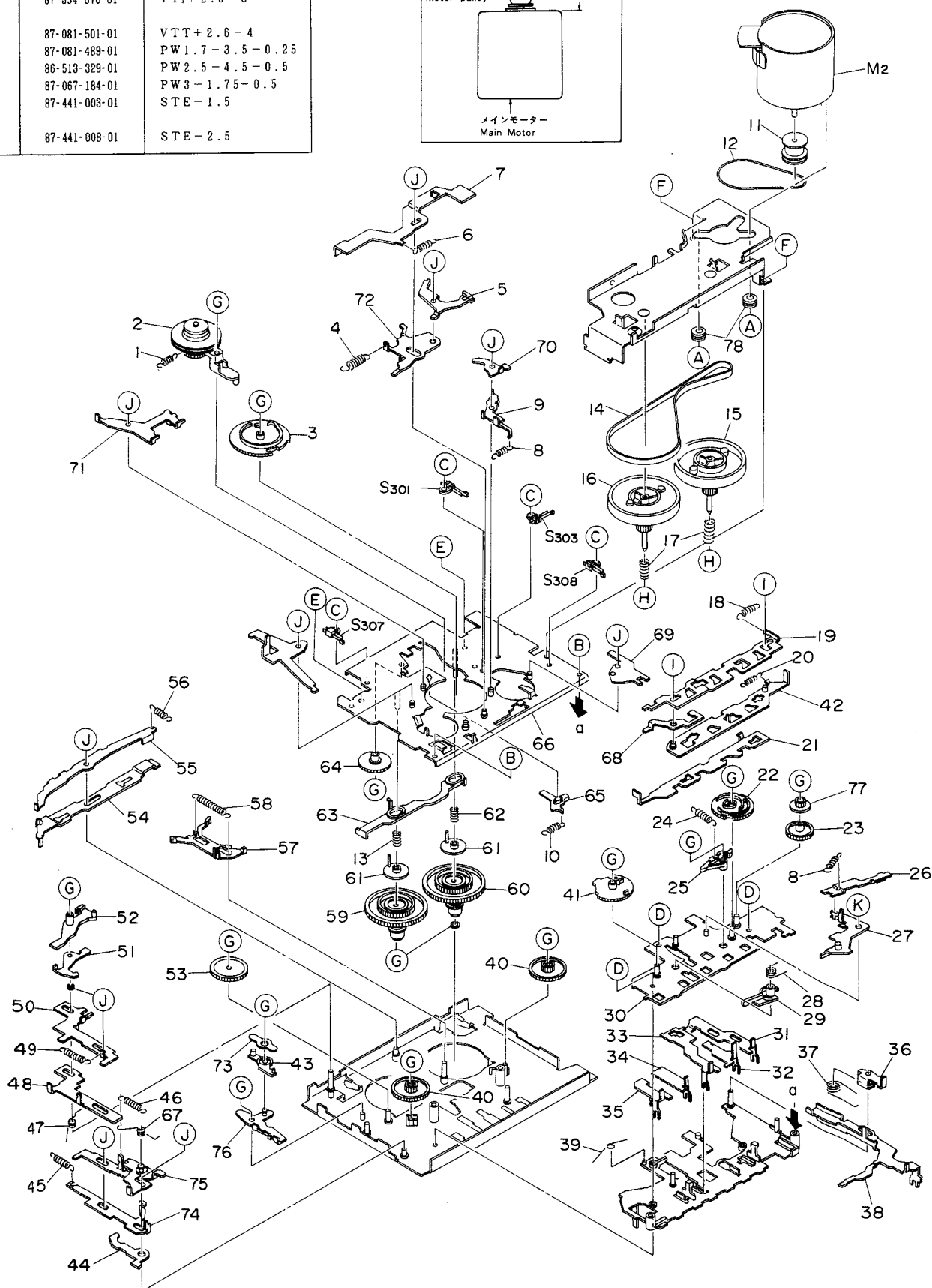
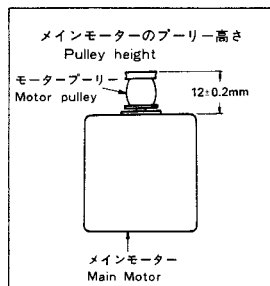


| Part No.<br>changed to | Ref. No. | Part No.    | Description               | Common<br>Model | Q'ty |  |
|------------------------|----------|-------------|---------------------------|-----------------|------|--|
|                        | 5 -      | ★82-138-231 | MECHANISM Ass'y           |                 | 1    |  |
|                        | 5-1      | ★86-513-267 | HEAD HOUSING Ass'y        |                 | 1    |  |
|                        | 5-2      | ★81-506-230 | AZIMUTH ADJUSTMENT SCREW  |                 | 2    |  |
|                        | 5-3      | ★86-513-437 | C-SPRING, AZIMUTH         |                 | 2    |  |
|                        | 5-4      | ★86-513-270 | HEAD BASE Ass'y           |                 | 1    |  |
|                        | 5-5      | 86-513-299  | GEAR, HEAD HOUSING        |                 | 1    |  |
|                        | 5-6      | ★86-513-374 | T-SPRING, GEAR SEGMENT    |                 | 1    |  |
|                        | 5-7      | 86-513-298  | GEAR, SEGMENT             |                 | 1    |  |
|                        | 5-8      | ★86-513-376 | STEEL BALL 1.2            |                 | 1    |  |
|                        | 5-9      | ★86-513-332 | E-SPRING, ACTUATING       |                 | 1    |  |
|                        | 5-10     | ★86-513-334 | E-SPRING, PLATE PAUSE     |                 | 1    |  |
|                        | 5-11     | ★86-513-421 | E-SPRING, PLATE PINCH     |                 | 1    |  |
|                        | 5-12     | 86-513-231  | PINCH LEVER F Ass'y       |                 | 1    |  |
|                        | 5-13     | ★86-513-368 | T-SPRING, PINCH F         |                 | 1    |  |
|                        | 5-14     | ★81-539-229 | LEVER, DETECTION          |                 | 1    |  |
|                        | 5-15     | ★86-513-279 | PLATE, PINCH              |                 | 1    |  |
|                        | 5-16     | ★86-513-281 | PLATE, PAUSE              |                 | 1    |  |
|                        | 5-17     | ★86-513-323 | P-SPRING, CASSETTE HOLDER |                 | 1    |  |
|                        | 5-18     | ★86-513-324 | P-SPRING, ACTUATING       |                 | 1    |  |
|                        | 5-19     | ★86-513-276 | LEVER HEAD SELECT Ass'y   |                 | 1    |  |
|                        | 5-20     | ★86-513-417 | E-SPRING, DIRECTION       |                 | 1    |  |
|                        | 5-21     | ★86-513-316 | PLATE, RID LOCK           |                 | 1    |  |
|                        | 5-22     | ★86-513-340 | E-SPRING, AUTO BLOCKING   |                 | 2    |  |
|                        | 5-23     | ★86-513-226 | LEVER PLAY GEAR F Ass'y   |                 | 1    |  |
|                        | 5-24     | ★86-513-423 | PLAY GEAR RESET F         |                 | 1    |  |
|                        | 5-25     | ★86-513-319 | SHAFT, PUSH-KEY           |                 | 1    |  |
|                        | 5-26     | ★86-513-372 | T-SPRING, PUSH-KEY        |                 | 3    |  |
|                        | 5-27     | ★86-513-307 | PUSH-KEY, PLAY            |                 | 3    |  |
|                        | 5-28     | ★86-513-306 | PUSH-KEY, PAUSE           |                 | 3    |  |
|                        | 5-29     | ★86-513-331 | C-SPRING, LOCK PLATE      |                 | 1    |  |
|                        | 5-30     | ★82-668-252 | LOCK PLATE AB             |                 | 1    |  |
|                        | 5-31     | ★86-513-201 | MECHANISM CHASSIS A Ass'y |                 | 1    |  |
|                        | 5-32     | ★86-513-229 | LEVER PLAY GEAR R Ass'y   |                 | 1    |  |
|                        | 5-33     | ★86-513-424 | PLAY GEAR RESET F         |                 | 1    |  |
|                        | 5-34     | ★86-513-450 | T-SPRING, REC BLOCKING    |                 | 1    |  |
|                        | 5-35     | ★86-513-433 | REC BLOCKING R            |                 | 1    |  |
|                        | 5-36     | ★86-513-434 | E-SPRING, REC BLOCKING    |                 | 1    |  |
|                        | 5-37     | ★86-513-369 | T-SPRING, PINCH R         |                 | 1    |  |
|                        | 5-38     | 86-513-233  | PINCH LEVER R Ass'y       |                 | 1    |  |
|                        | 5-39     | ★86-513-456 | C-SPRING, PINCH LEVER     |                 | 2    |  |
|                        | 5-40     | ★86-513-364 | LEVER, DIRECTION SELECT   |                 | 1    |  |
|                        | 5-41     | ★86-513-367 | REC BLOCKING              |                 | 1    |  |
|                        | 5-42     | ★81-544-215 | SPECIAL SCREW, M2.6       |                 | 1    |  |
|                        | 5-43     | ★81-539-230 | E-SPRING, DETECTION       |                 | 1    |  |
|                        | 5-44     | ★86-513-448 | LEVER MODE SEME Ass'y     |                 | 1    |  |
|                        | 5-45     | ★86-513-465 | HOLDER, PUSH-BUTTON B     |                 | 1    |  |

# EXPLODED VIEW-6

1 2 3 4 5 6 7

| Ref. No. | Part No.      | Description             |
|----------|---------------|-------------------------|
| A        | 87-251-072-21 | U+2.6-5                 |
| B        | 87-067-176-01 | UT <sub>2</sub> +2.6-14 |
| C        | 87-354-033-01 | VT <sub>3</sub> +2-4    |
| D        | 87-354-074-01 | VT <sub>3</sub> +2-5    |
| E        | 87-354-070-01 | VT <sub>3</sub> +2.6-3  |
| F        | 87-081-501-01 | VTT+2.6-4               |
| G        | 87-081-489-01 | PW1.7-3.5-0.25          |
| H        | 86-513-329-01 | PW2.5-4.5-0.5           |
| I        | 87-067-184-01 | PW3-1.75-0.5            |
| J        | 87-441-003-01 | STE-1.5                 |
| K        | 87-441-008-01 | STE-2.5                 |

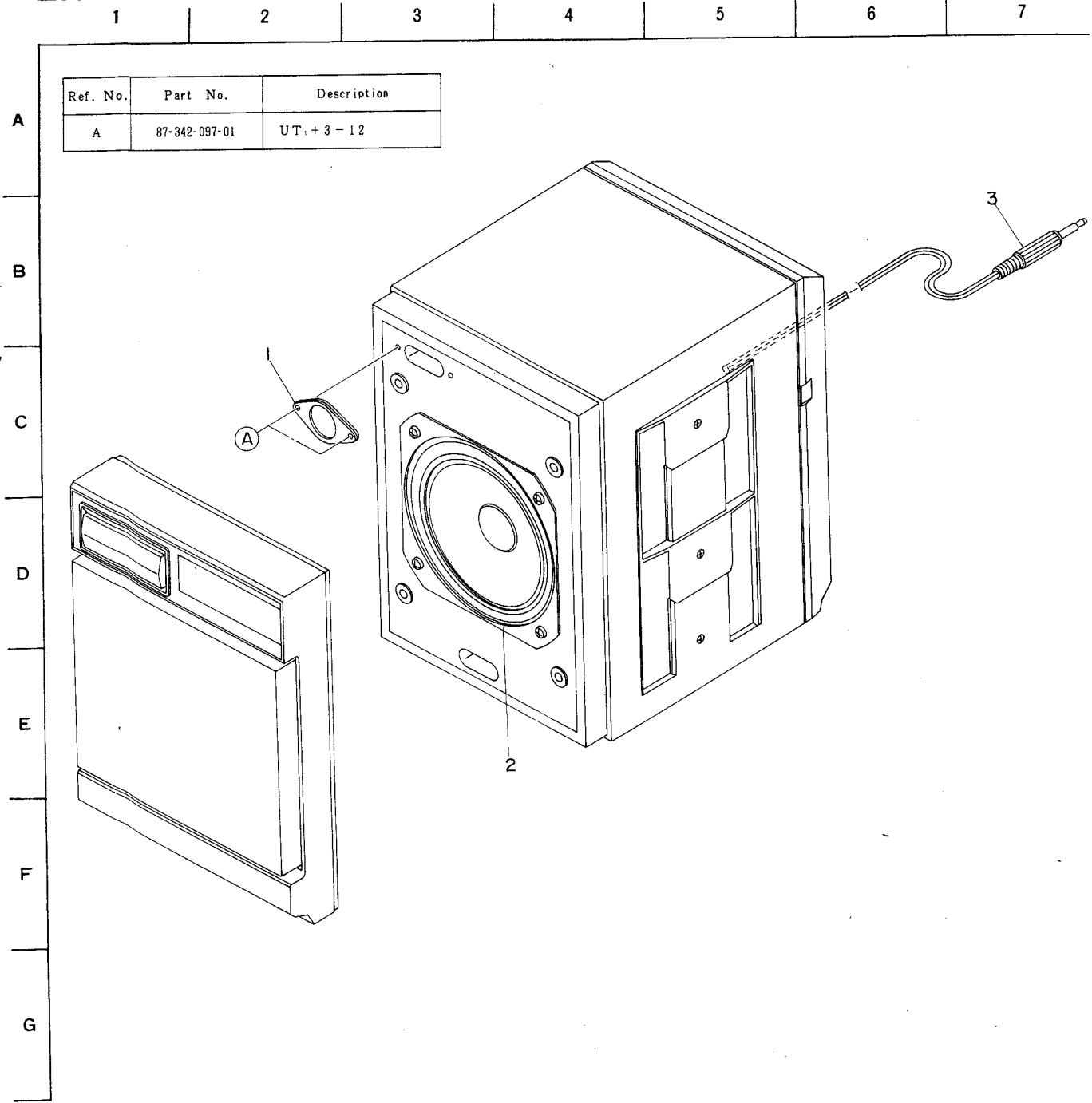


| Part No.<br>changed to | Ref. No. | Part No.    | Description                    | Common<br>Model | Q'ty |
|------------------------|----------|-------------|--------------------------------|-----------------|------|
|                        | 6-       | ★82-138-231 | MECHANISM Ass'y                |                 | 1    |
|                        | 6-1      | ★86-513-339 | E-SPRING, FR LEVER             |                 | 1    |
|                        | 6-2      | 86-513-246  | FR PULLEY Ass'y                |                 | 1    |
|                        | 6-3      | 86-513-291  | GEAR, CAM PLAY                 |                 | 1    |
|                        | 6-4      | ★86-513-417 | E-SPRING, DIRECTION            |                 | 1    |
|                        | 6-5      | ★86-513-300 | TRIGGER LEVER, PLAY            |                 | 1    |
|                        | 6-6      | ★86-513-464 | E-SPRING, DIRECTION B          |                 | 1    |
|                        | 6-7      | ★86-513-317 | LEVER, DIRECTION               |                 | 1    |
|                        | 6-8      | ★86-513-418 | E-SPRING, TRIGGER REVERSE      |                 | 2    |
|                        | 6-9      | ★86-513-304 | TRIGGER LEVER, REVERSE         |                 | 1    |
|                        | 6-10     | ★86-513-340 | E-SPRING, AUTO BLOCKING        |                 | 2    |
|                        | 6-11     | 86-513-419  | MOTOR PULLEY 10.48             |                 | 1    |
|                        | 6-12     | 86-513-440  | RUBBER BELT FR B               |                 | 1    |
|                        | 6-13     | ★86-513-381 | C-SPRING, AUTO                 |                 | 1    |
|                        | 6-14     | 86-513-429  | MAIN BELT C                    |                 | 1    |
|                        | 6-15     | 86-513-478  | FLYWHEEL Ass'y R B             |                 | 1    |
|                        | 6-16     | 86-513-482  | FYLWHEEL Ass'y F               |                 | 1    |
|                        | 6-17     | ★86-513-341 | C-SPRING, FLYWHEEL             |                 | 2    |
|                        | 6-18     | ★86-513-338 | E-SPRING, PLATE LOCK           |                 | 1    |
|                        | 6-19     | ★86-513-262 | SLIDE PLATE LOCK               |                 | 1    |
|                        | 6-20     | ★86-513-497 | E-SPRING, PLATE MS B           |                 | 1    |
|                        | 6-21     | ★86-513-265 | SLIDE PLATE MS                 |                 | 1    |
|                        | 6-22     | 86-513-293  | GEAR, REVERSE CAM              |                 | 1    |
|                        | 6-23     | 86-513-295  | GEAR, REVERSE B                |                 | 1    |
|                        | 6-24     | ★86-513-333 | E-SPRING, LEVER PLAY           |                 | 1    |
|                        | 6-25     | ★86-513-309 | LEVER, ACTUATING RESET         |                 | 1    |
|                        | 6-26     | ★86-513-258 | REC LEVER A                    |                 | 1    |
|                        | 6-27     | ★86-513-255 | LEVER PLAY Ass'y               |                 | 1    |
|                        | 6-28     | ★86-513-337 | T-SPRING, LEVER PAUSE          |                 | 1    |
|                        | 6-29     | ★86-513-310 | LEVER, PAUSE                   |                 | 1    |
|                        | 6-30     | ★86-513-415 | MECHANISM CHASSIS C Ass'y      |                 | 1    |
|                        | 6-31     | ★86-513-288 | PLATE BUTTON, REWD             |                 | 1    |
|                        | 6-32     | ★86-513-287 | PLATE BUTTON, PLAY             |                 | 1    |
|                        | 6-33     | ★86-513-286 | PLATE BUTTON, FF               |                 | 1    |
|                        | 6-34     | ★86-513-285 | PLATE BUTTON, STOP             |                 | 1    |
|                        | 6-35     | ★86-513-282 | PLATE BUTTON PAUSE Ass'y       |                 | 1    |
|                        | 6-36     | ★86-513-305 | LEVER REC B                    |                 | 1    |
|                        | 6-37     | ★86-513-373 | T-SPRING, REC                  |                 | 1    |
|                        | 6-38     | ★86-513-289 | PLATE BUTTON, REC              |                 | 1    |
|                        | 6-39     | ★86-513-428 | T-SPRING, FF BUTTON            |                 | 1    |
|                        | 6-40     | 86-513-294  | GEAR, PLAY                     |                 | 2    |
|                        | 6-41     | 86-513-292  | GEAR, PAUSE CAM                |                 | 1    |
|                        | 6-42     | ★86-513-260 | SLIDE PLATE MOTOR SWITCH Ass'y |                 | 1    |
|                        | 6-43     | 86-513-314  | LEVER, AUTO KICK               |                 | 1    |
|                        | 6-44     | ★86-513-422 | LEVER, MANUAL                  |                 | 1    |
|                        | 6-45     | ★86-513-402 | E-SPRING, MODE B               |                 | 1    |



| Part No.<br>changed to | Ref. No. | Part No.    | Description                 | Common<br>Model | Q'ty |  |
|------------------------|----------|-------------|-----------------------------|-----------------|------|--|
|                        | 6-46     | ★86-513-401 | E-SPRING, MODE A            |                 | 1    |  |
|                        | 6-47     | ★86-513-339 | T-SPRING, REC BLOCKING C    |                 | 1    |  |
|                        | 6-48     | ★86-513-351 | SLIDE PLATE, REC BLOCKING C |                 | 1    |  |
|                        | 6-49     | ★86-513-400 | E-SPRING, SLIDE PLATE REC   |                 | 1    |  |
|                        | 6-50     | ★86-513-350 | SLIDE PLATE, REC            |                 | 1    |  |
|                        | 6-51     | ★86-513-387 | LEVER, REC BLOCKING         |                 | 1    |  |
|                        | 6-52     | ★86-513-365 | LEVER, REC BLOCKING         |                 | 1    |  |
|                        | 6-53     | 86-513-296  | GEAR, AUTO STOP             |                 | 1    |  |
|                        | 6-54     | ★86-513-356 | SLIDE LEVER, REC BLOCKING   |                 | 1    |  |
|                        | 6-55     | ★86-513-355 | LEVER REC A                 |                 | 1    |  |
|                        | 6-56     | ★86-513-398 | E-SPRING, REC A             |                 | 1    |  |
|                        | 6-57     | ★86-513-308 | SLIDE PLATE, BRAKE          |                 | 1    |  |
|                        | 6-58     | ★86-513-371 | E-SPRING, BRAKE             |                 | 1    |  |
|                        | 6-59     | 86-513-239  | REEL PLATFORM T Ass'y       |                 | 1    |  |
|                        | 6-60     | 86-513-240  | REEL PLATFORM S Ass'y       |                 | 1    |  |
|                        | 6-61     | 86-513-313  | SLIP DISK                   |                 | 2    |  |
|                        | 6-62     | ★86-513-453 | C-SPRING, AUTO B            |                 | 1    |  |
|                        | 6-63     | ★86-513-312 | SLIDE PLATE AUTO            |                 | 1    |  |
|                        | 6-64     | 86-513-297  | GEAR, FF                    |                 | 1    |  |
|                        | 6-65     | ★86-513-311 | LEVER AUTO EJECT            |                 | 1    |  |
|                        | 6-66     | ★86-513-454 | MECHANISM CHASSIS B Ass'y   |                 | 1    |  |
|                        | 6-67     | ★86-513-403 | T-SPRING, LEVER SLIDE PLATE |                 | 1    |  |
|                        | 6-68     | ★86-513-261 | EJECT LEVER                 |                 | 1    |  |
|                        | 6-69     | ★86-513-276 | LEVER REVERSE Ass'y         |                 | 1    |  |
|                        | 6-70     | ★86-513-303 | LEVER REVERSE BLOCKING      |                 | 1    |  |
|                        | 6-71     | ★86-513-301 | LEVER MUT SW                |                 | 1    |  |
|                        | 6-72     | ★86-513-302 | TRIGGER LEVER PAUSE         |                 | 1    |  |
|                        | 6-73     | ★86-513-489 | P-SPRING, AUTO              |                 | 1    |  |
|                        | 6-74     | ★86-513-385 | SLIDE PLATE MODE B          |                 | 1    |  |
|                        | 6-75     | ★86-513-406 | SLIDE PLATE MODE A Ass'y    |                 | 1    |  |
|                        | 6-76     | ★86-513-414 | LEVER AUTO A Ass'y          |                 | 1    |  |
|                        | 6-77     | 86-513-459  | GEAR REVERSE C              |                 | 1    |  |
|                        | 6-78     | ★86-513-441 | COLLAR                      |                 | 2    |  |

EXPLODED VIEW-7



| Ref. No. | Part No.      | Description  |
|----------|---------------|--------------|
| A        | 87-342-097-01 | UT: + 3 - 12 |

■ SPEAKER LIST

| Part No.<br>changed to | Ref. No. | Part No.    | Description    | Common<br>Model | Q'ty |  |
|------------------------|----------|-------------|----------------|-----------------|------|--|
|                        | 7-1      | ★81-541-661 | TWEETER        | ※               | 2    |  |
|                        | 7-2      | ★81-541-660 | SPEAKER UNIT   | ※               | 2    |  |
|                        | 7-3      | ★83-092-615 | PLAG CORD 3.5φ |                 | 2    |  |

# ACCESSORIES/PACKAGE LIST

| Part No.<br>changed to | Ref. No. | Part No.    | Description                                                   | Common<br>Model | Q'ty |  |
|------------------------|----------|-------------|---------------------------------------------------------------|-----------------|------|--|
|                        | 1        | ★81-541-904 | INSTRUCTION BOOKLET (HS, HB,<br>HUB, US, UB, CS, CB, GB only) | ※               | 1    |  |
|                        | 2        | ★81-541-907 | INSTRUCTION BOOKLET<br>(ES, EB, KS, KB, ZS, ZB only)          | ※               | 1    |  |
|                        | 3        | ★83-203-995 | BAND SELECTOR DRIVER                                          |                 | 1    |  |
|                        | 4        | ★87-032-845 | SIEMENS PLUG (HS, HB, HUB only)                               |                 | 1    |  |
|                        | 5        | ★87-034-983 | AC CORD F Ass'y (HS, HB, HUB only)                            |                 | 1    |  |
|                        |          | ★87-034-985 | AC CORD F Ass'y AS (GB only)                                  |                 |      |  |
|                        |          | ★87-034-986 | AC CORD F Ass'y CEE<br>(ES, EB, ZS, ZB only)                  |                 |      |  |
|                        |          | ★87-034-999 | AC CORD Ass'y UK (KS, KB only)                                |                 |      |  |
|                        |          | ★87-034-991 | AC CORD Ass'y (CS, CB only)                                   |                 |      |  |
|                        |          | ★87-034-982 | AC CORD Ass'y (US, UB only)                                   |                 |      |  |
|                        |          | ★81-541-180 | SPEAKER S [S]                                                 |                 | 1    |  |
|                        |          | ★81-541-183 | SPEAKER B [B]                                                 |                 | 1    |  |

# AIWA Co., Ltd. Tokyo Japan